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Minimum Prices vs. Promises

ECONOMIC minimum prices are not always what they purport to be, nor as rigid as laws of Medes and Persians, as crude rubber buyers are learning at much expense. When the Stevenson Restriction Act was first broached purchasers were told that all the growers sought, in getting governmental assent to price and output regulation, was to insure for their product a price yielding but a reasonable return above actual cost. This economic minimum was put at 15 pence per pound.

Prior to the visit to the United States of the British Rubber Growers' Association representatives in January, 1923, H. Stuart Hotchkiss, at the annual meeting of the Rubber Association of America in New York, read a letter from one of the delegates, H. Eric Miller, giving assurance that if the price were maintained at 15 pence between November, 1922, and January, 1924, inclusive, quarterly increases would be allowed in the exportable output so as to raise the latter from 60 to 80 per cent of standard production. If the price averaged 18 pence after the first six months releases would rise even to 95 per cent.

Mr. Miller and his codelegates, P. J. Burgess and Sir Stanley Bois, were quite non-committal during their conferences with the American rubber manufacturers, but on their return to England they reported that rubber buyers in the United States conceded the fairness of the claim that standard quality crude should bring 1 shilling 6 pence per pound, London landed terms. Regarding this as a promise that no further advantage would be sought, buyers then sought to adjust purchases to the assumed minimum price.

Despite the economic minimum the rubber market has had some curious price swings, not wholly free from the suspicion of speculative manipulation, as when the price dropped below that peg in 1924, affording a reason for cutting the export allowance to 50 per cent, and thus paving the way for a price advance of over three times the minimum in 1925. Of late the price has been hovering close to 43 cents with trading in the doldrums, but the market-wise regard this as no mere coincidence. London prices for the quarter ended October 31 have not averaged 1 shilling 9 pence, and therefore exports of crude rubber during the next three months will be reduced from 100 per cent to 80 per cent of standard production. However, this was previously foreseen and rubber manufacturers are apparently not anxious about future supplies.

Selling Rubber Goods Abroad

OFFICIAL reports show that August exports of rubber goods from the United States were valued at $4,296,696, as compared with $5,056,695, the July figure. This is, of course, not what it should be, considering American enterprise in so many other directions. It is not flattering, either, to be reminded that United States

exports are still very small compared on a per capita basis with the exports of leading foreign countries; but such is the truth.

Rubber manufacturers, in common with many others, have been so long engrossed with the task of supplying the home market that they seem to have overlooked the great opportunities offered in foreign markets. But the time is not far off when as a result of high pressure mass production a condition akin to saturation may be experienced. A well-developed overseas market would, however, provide an excellent offset to possible over-production outstripping home consumption and help to insure ample employment for American labor.

Those who still doubt whether it would pay to seek foreign markets should advise with the Bureau of Foreign and Domestic Commerce of the United States Department of Commerce. The government is eager to share with American manufacturers its great fund of recent and accurate information concerning foreign needs, buyers, and requirements; and it has helped a great many to create new trade and to extend established lines. Never was the American consular service more helpful and efficient. Excellent aid is also rendered by the National Foreign Trade Council of Washington, D. C.

Those who are successful in competing abroad not only have merchandise of outstanding merit and self-evident need at moderate prices, but they are particular to conform to even exacting foreign requirements. Liberal credits are usually expected, and these can be arranged through international banking houses. In foreign trading study must be made of purchasers' preferences in the packing and marking of goods, in the forms of invoices and manifests, and in many other matters, some seemingly insignificant. Even the use of abbreviations is penalized with fines at some custom houses. But these are mere details. The main thing is for Americans to become more aggressive in foreign merchandising; and the rubber industry could place itself in the vanguard.

The Movies and Rubber

SO GREAT is the agitation in Great Britain over the dominance of the American motion picture industry that the latter is even in imminent peril of a devastating thunderbolt from *The Times*. Yet many Americans are at a loss to understand the perturbation among the British, who are freely accused of maintaining a crude rubber corner for nearly four years. Of course, it is possible for both sides to indulge in a lot of acrimonious recrimination; but what would be gained? The fact remains that if the British would or could produce more attractive cinema scenes they would not be jealous of Hollywood, and if the Americans would or could raise sufficient rubber the prestige of Singapore would give them but little concern. In truth each is but reaping the reward of unique enterprise, together with huge investment and astute management.

Safety First Always

THE seamy side of our industrial progress was revealed at an interstate accident prevention conference held recently in Washington. Secretary of Labor Davis placed the toll at not less than 23,000 deaths and 2,500,000 non-fatal accidents yearly. Doubtless the pro rata of casualties is diminishing, but the wastage of life and limb, with the attendant loss and suffering, is still much too high. It is also discreditable to a nation that in so many other respects has reached such a high plane of efficiency. We are told that 85 per cent of the accidents are preventable. It might also be said that among all the industries that have in late years striven, through the installation of safety and like devices, to lessen personal perils of employes none has a finer record to its credit than the rubber industry.

SURGEONS' NARROW RUBBERIZED TAPE HAVING BUT ONE side coated, is being extensively used for making labels and price tabs. The tabs are cut in any desired length and readily take marks with ink, wax crayon, blacklead or indelible pencil. Such labels adhere with great tenacity, and are especially suited to such smooth surfaces as glass, chinaware, celluloid, and synthetic resin articles.

A BENEFACTOR TO HUMANITY HAS BEEN DESCRIBED AS anyone who will make two blades of grass grow where but one grew before. So, too, it may be fairly claimed that anyone who will make three pounds of rubber last as long as four is likewise rendering signal service to mankind. This is the aim, which may soon be realized, of many using the new rubber anti-oxidants. The widespread employment of such age-resisting substances might even give the Stevenson Restriction Committee some concern in the near future.

DISTRESSED BUT NOT DISCOURAGED BY THE FATAL Shenandoah disaster, the federal government plans to build two new airships each three times the size of the luckless "Daughter of the Stars"; and for that purpose intends to spend $8,000,000. It is gratifying to note that the adverse dirigible propaganda to which this journal called attention has been thwarted; that the naval authorities have learned valuable lessons; and, not the least, that considerable employment will soon be given makers of rubberized balloon fabric.

AMERICANS ARE NOT ONLY GREAT USERS OF RUBBER but also of bottled goods,—the non-interdicted kind, of course; yet no one seems very anxious about growing cork for stoppers. The patriotic do not like the idea of having to raise it on foreign soil, and investors balk when they hear that it takes about forty years to produce cork of quality. They could get even quicker returns by raising Angora goats to provide mohair for automobile cushions, but they do not appear to be interested.

Rubber Compounding[1]

Laboratory Development of Compounds—Formula Sheets and Record Keeping—Quality and Economy—Calculations

By Webster Norris

AN important forward step was taken in the rubber industry when the chemist was included in the factory organization and assigned the work of developing compounds. The introduction of laboratory methods for the study and control of the materials, processes and products of the industry not only relieves the factory superintendent by allowing him more time for his supervisory duties in the plant, but it also developed compounding on a new basis by specialists provided with laboratory facilities for mixing, curing and testing.

After many years of such special study on the part of rubber goods manufacturers, the art of compounding is now receiving new stimulus from the laboratories devoted to the study of its problems by rubber reclaimers, and the manufacturers of vulcanization accelerators, reenforcing materials, softeners, pigments, substitutes, etc.

Compounding Records

Records showing the development of a compound are indispensable. In arrangement they take many forms, according to the ideas or purposes of the compounders. The essential points of the record should never be omitted. These include: date, itemized ingredients, proportions, the specific gravity, cost and uses of the stock.

Used for..... Date.....

Compound No.....

MIXING		MATERIALS	WEIGHTS	COST (AT VARIOUS DATES)				
Pounds	Ounces		PER CENT	Date	Date	Date	Date	Date
		Totals						

Remarks.....

Specific Gravity.....

Tests.....

Form 1

A tabular form is the most natural and convenient arrangement for a formula sheet. It should be printed as a card index or in loose-leaf book form. Rather than overcrowd the formula sheet a separate one should be provided for recording physical tests, graphs of cures, etc. The cost data of rubber and other materials are supplied through the purchasing department and the items listed separately.

The accompanying illustrations of formula sheets are practical and representative examples of current practise in compound record keeping. Taken in order they indicate how compounders have advanced to the volumetric aspect of compounding.

Form 1 shows a very simple and convenient gravimetric record arrangement in which at the left of the column of materials are spaces for the mixing weights in pounds and ounces, while to the right the proportions of the materials by weight percentages are to be entered. To the right of the center several columns are provided in which to note changes in cost of the various items. This plan allows refiguring the formula as the basic rubber items change in cost from time to time.

On Form 2 the physical properties, cure and the rubber compound number are emphasized by being displayed at the top of the sheet. The ingredient weights are entered in pounds and ounces and there is no provision for recording their percentage proportions either by weight or volume. However, the volumetric feature is present, since cubic foot weight is recorded. Spaces are also provided for entering changes in pound and cubic foot costs as figured at different dates. At the bottom of the sheet the cost of labor and overhead per pound of mixing is entered for addition as a part of the cost of the mixed stock.

Friction Pull	Tensile	Elongation	Hardness	CURE Steam	CURE Press	Date..... Compound No.....					
IN SERVICE ..... OUT SERVICE											
Used for.....				Date.....		Date.....		Date.....			
Specific Gravity ..... Weight per Cu. ft.....				Cost Pound	Cost Cu. Ft	Cost Pound	Cost Cu. Ft	Cost Pound	Cost Cu. Ft		
Lbs	Oz.	Ingredients		Price	Amt.	Price	Amt.	Price	Amt.		
		Labor and Overhead									
		Totals									

Form 2

Used for..... Date..... Compound No.....

Pound Cost..... Cu. ft. Cost..... Spec. Gravity.....			COMPOUND CHANGES Reasons
Ingredients	Pct. Wht.	Pct. Vol.	
			Results

Form 3

Form 3 affords means for recording both gravimetric and volumetric data. The ingredient proportions are shown in adjoining columns by corresponding weight and volume percentages. On the face of the form are spaces for recording the compound changes, date and reason for making them, and the results. On the reverse side of this form, which is not shown, column rulings are provided for recording the amounts of the stock mixed.

[1] Copyright, 1926, by Webster Norris. Continued from THE INDIA RUBBER WORLD, January 1, 1926, pp. 189-190.

Form 4 as shown, comprises three sections. In the upper one the detailed ingredients are recorded by poundages, and also by the corresponding weight and volume percentages. In the middle section the crude rubber equivalent in the reclaim, and the softeners and pigments in the reclaim are itemized as volume percentages of the finished compound. In the lower section the gravity is noted, also the compound cost, as of different dates, by the pound, pound-volume or cubic foot.

Form 5 provides for compounding rubber volumetrically. That is to say, the ingredient items are entered first by volume percentages. The successive stages of the calculation of the formula are entered in the columns progressively toward the right of the sheet. In the last column are entered, in pounds and ounces, the mixing weights. The formula calculations are briefly as follows: The volume percentage items are multiplied by their respective pound-

Used for	Date			
.....	Compound No.			
Ingredients	Pounds	Ounces	PERCENTAGES Weight	Volume
Totals				

Reclaimed Rubbers	Volume Percent
Rubber in reclaim	
Softeners in reclaim	
Pigments in reclaim	

Record of Cost Changes	Date	Date	Date	Date	Date	Date	Date
Specific Gravity							
Pound Cost							
Pound-Volume Cost							
Cubic Foot Cost							

Form 4

volume rate in the adjoining column and the extensions are entered in the column next beyond. The total of these extensions is the pound-volume cost. This figure affords prompt comparison with the predetermined volume cost and allows the compounder to adjust the ingredient volumes to meet the desired volume cost. The specific gravities of the ingredients used in the formula are recorded in the next column for convenience. Multiplication of the volume percentage of each item of material by its specific gravity gives its specific weight. This is recorded in the column for specific weights. The total of this column is the specific gravity of the stock. The weight percentages corresponding to the volume percentages are found by multiplying the items of specific weight by 100 and dividing the product by the total of the specific weight column. These weight percentages are converted and entered in the last column as pounds and ounces for the batch of the desired weight.

Form 6 provides for recording the ingredient items, the mill batch weights, weight percentages, and percentages by weight and by volume on the basis of 100 pounds of rubber. Below these data are recorded the weight percentages of the essential items, rubber, accelerator and sulphur, also the gravity of the stock, pound and volume costs.

Record Keeping

A word of caution will not be amiss in regard to keeping track of compound charges by date and number. Every compounder

Used for						Laboratory No. ..... Mill No. ..... Cure	
Ingredients	Volume Per Cent	Mill Volume Cost Rates	Mill Volume Cost	Ingredient Gravities	Specific Volume Weight	Weight Per Cent	Mixing Weights
Totals							
Remarks							

Form 5

knows that, in the stress of factory operation, occasions frequently arise when emergencies, such as shortage in supply of one or more ingredients or some other contingency, demand that a stock be changed at short notice. All compound changes should be made under the invariable rule that no matter whether the change be important or unimportant it should be recorded on a new formula sheet. This should bear the date of the change, and be numbered with the original compound number with a letter added.

The rule of a new formula sheet for every change from the original should apply not only to changes of weight proportions, however slight in any item, but to changes or additions of sorts of rubber, brands of reclaim, or other ingredients.

This plan of following changes closely is well worth the effort involved in observing it. For it effectually eliminates the misunderstandings and entanglements that unrecorded changes in stocks always cause.

When two or more old mixings are combined to form a new stock, doubts and complications are certain to arise later if the individual component stocks are not specifically identified as to whether they were used in their original or some changed form.

Used for			Date ..... Compound No.	
Ingredients	Mill Batch Weights	Weight Per Cent	Per Cent on 100 lbs. of Rubber By Weight	By Volume
Totals				
Weight Percentages	Rubber ..... Accelerator ..... Sulphur		Sp. Gr. ..... Pound Cost ..... Volume Cost	

Form 6

In the case of combination stocks it is best to disentangle the items of the combination mixing by figuring, from the original formula, the details of the combination as to every individual ingredient. The properly itemized formula then stands for a new compound under its own number and can be reproduced when wanted quite independently of the original component mixings.

Machine Grown Rubber in the United States

Rubber Growing by American Farmers—Plant-Breeding and Mechanical Efficiency — America's Answer to Cheap Coolie Labor

By Vincent Sauchelli, B. Sc.

BEFORE rubber plantations were ever heard of in the Dutch or British colonies of the Far East, there were displayed at the Centennial Exposition in Philadelphia, in 1876, samples of native rubber prepared in Mexico. Today, fifty years after, reliable information has it that a leading American rubber company is prepared to grow rubber in continental United States territory on a scale sufficient to supply the major requirements of our manufacturers at prices competitive with plantation crude. This is indeed capital news. The information that follows should be of interest to the farmers of our Southland, as this rubber has a range coextensive with that of our cotton belt. We are told it can be grown in successful competition with staple crops such as beans, corn, cotton and others.

To the general reader what follows is bound to interest him, for the story is one of courageous pioneering efforts by an American organization that has doggedly persisted in working out careful, costly research in botany, chemistry and engineering problems to reach a practical goal. The achievement seems worthy of our best traditions.

When High Wages Are Not a Handicap

If a country of high wages is to compete successfully with a country of low wages in the capture of world markets it will have to be through the exercise of inventive genius and efficient organization. Plantation crude rubber is produced today on vast areas in the Far East where labor is plentiful and cheap. For crude rubber growing on any extensive competitive basis to be established on the American continent, it will have to overcome this advantage of cheap labor as well as the prejudice and the conservatism of manufacturers. However, when it is considered that on an average 600,000 men are needed on the far eastern plantations to produce the one billion pounds of rubber America will soon consume annually, which is at the rate of one man for every 1,660 pounds of dry rubber, it is safe to conclude that this state of affairs could be improved upon by mechanical invention. Therefore, something of a sensation was created when G. H. Carnahan, president of the Intercontinental Rubber Co., recently declared that the experience of his company indicates that this same quantity of rubber can be produced in the United States by 40,000 well paid farmers and mechanics continuously employed throughout the year. This would average an annual return of 25,000 pounds for the labor of each man, as compared with 1,660 pounds for each coolie laborer.

P. & A. Photos

Dr. Wm. B. McCallum Displaying a Four-Year Guayule Plant

Wages Rising in the Orient

It is assumed of course that as time goes on and the natives of the Far East rise higher in their standard of living owing to continued prosperity and the influence of our material civilization they will demand higher wages. This is being sensed on the plantations even today. An almost universal change over from former daily to present alternate daily methods of tapping the rubber trees can be traced to a necessity to reduce the labor force and to bring about other economies. We are convinced the argument of cheap labor may, as time goes on, lose much of its persuasiveness. High labor costs do not necessarily mean high production costs, especially when organized efficiency, mechanical invention and a high average education of the laborer are additional factors. These qualities cannot be cultivated to the same degree in native laborers that is possible with even average white labor. The present economic condition in competitive manufactures which favor the United States and Canada with highest wages as against Europe with low wages illustrates this principle. The point is raised here to show that well organized efforts with proper financial backing for the purpose of exploiting our own natural sources of raw rubber have more than one advantage over the Orient's preponderant advantage of cheap labor.

What Our Native Rubber Plant Is

What is this natural source of rubber that bids fair to put our country on the rubber map? None other than guayule. This name is given to a hardy shrub whose native habitat lies in the plateau region of central and northern Mexico and extending a bit into the Big Bend region of Texas. In the wild state it is found in altitudes ranging from four to seven thousand feet where rainfall is about seven to fourteen inches annually with a considerable dry period during the year. As to soil, it has been forced almost exclusively to limestone hills and slopes. These are the characteristics of the wild guayule shrub. But apparently, as we learn from the admirable research work of that tireless botanist, Dr. W. B. McCallum, the shrub did not always display these characteristics. It had to adapt itself to these very difficult conditions of existence in its efforts to survive against the more aggressive encroachments of its natural enemy, the "Gobernadora" or "creosote shrub." How wild guayule has been "bred back," so to speak, to a type that can be grown under more favorable agricultural conditions is a fascinating story that is briefly sketched and illustrated in the following paragraphs.

Taming the Wild Plant

The conditions under which guayule grows in the wild state could never possibly favor any extensive cultivation. The problem was presented of finding suitable ways and means of getting the plant to adapt itself from a semi-desert environment to conditions of intensive culture and forced growth without losing in any degree its tendency to secrete rubber. After many trials and tribulations covering a period of 15 years or more, three outstanding problems were solved: (1) The plant was made to reproduce by seed in a practical way on a large scale; (2) it was made to secrete sufficient rubber under conditions of forced growth; and (3) the successful transplanting to the field, under control from nurseries.

The factors which control the success of the planting operations and the subsequent cultural practices have been worked out in great detail. They must be understood and carefully followed by the grower. A too intensive forcing will produce fine shrubs but little rubber. A certain seasonal and periodic rhythm between the functions of growth and the secretion of rubber is present in the life of the plant and this rhythm must be taken advantage of in its domestication. Where irrigation is employed, the water must be withdrawn at the proper time in the functional rhythm so as to throw the plant into a dormant state. This alternation of growing period with dormant period simulates the environment of the wild shrub but, being under control of man, it is possible to intensify each period and thus bring about cumulative effects of both. This knowledge makes possible a growth in strictly arid regions with irrigation. Where there are exclusive winter rains, the same effects are produced without irrigation and naturally at lower operating costs.

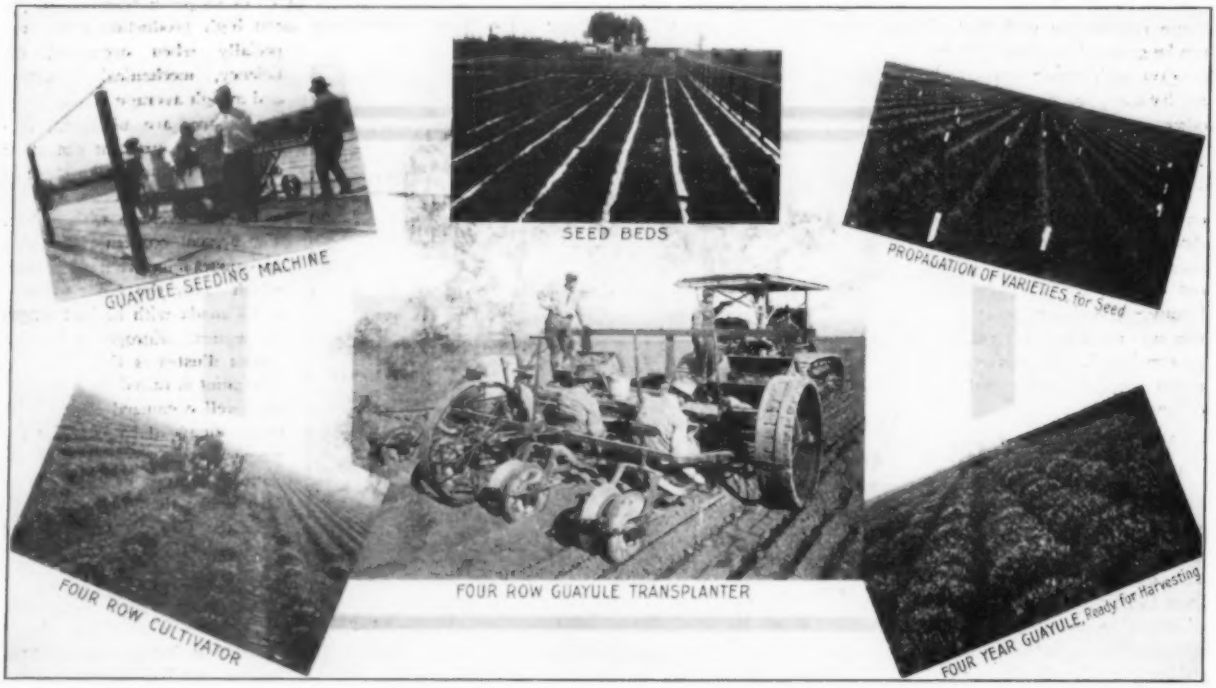
What the Guayule Farmer Should Know

For the farmer of our Southland we will try to answer some of the practical questions which naturally come to his mind at this point of our story.

The production of rubber from wild guayule shrub has been going on for many years, and since 1904 the amount of dry rubber produced and marketed totals 130,000,000 pounds. During 1925, guayule furnished 8,500,000 pounds of rubber to the world's supply. This considerable production came from a limited area of north central Mexico and south Texas but was furnished by shrubs which grew and reproduced spontaneously by nature. This will give you a fair idea for comparison when you are told that new varieties have been developed which are better yielders, which will be planted out, cultivated and harvested by machinery. The areas capable of being utilized in all parts of the cotton belt and even in other sections of the South now given over to corn, beans and other crops, are more than sufficient for its cultivation. A point to be stressed in guayule growing is that frost does not kill; it helps the plant, within limits, to store more rubber. The plant survives temperatures as low as 5 degrees F.

A Machine Grown and Fabricated Product

Guayule rubber as planned to be raised and developed in this country will be mechanized from beginning to end. Methods and processes have been very cleverly worked out which enable the grower to cultivate, seed, set out the plants and harvest,—in short, to perform every operation required to bring the shrub from seed to maturity by strictly mechanical means. American native rubber to be produced by American individual farmers will be a machine grown and a machine fabricated product. The plan that is being evolved aims to put guayule growing in the hands of the individual farmer or small landowner who contracts his crop for so many years ahead at minimum or sliding scale prices and is guided in his methods and financed by the factory organization or central in his locality. This plan has been successfully worked out in our beet sugar industry. The farmer usually will agree to plant a certain area. He then plants one-quarter or one-fifth of his total guayule area each year. In five years he will be able to harvest his first year's planting. From then on he rotates, harvesting one section and replanting it every year.



Growing Guayule Commercially on the 400-Acre Tract of the Rubber Exploration Co., Salinas, California

On experimental areas in California the cultivation of guayule is carried on without irrigation—on the so-called dry farming principle. The plants are set out according to a spacing plan which is designed to encourage a root system that will use up the soil water within a certain period following the winter rains. When this soil water is exhausted a reaction occurs in the plant in accordance with its natural instinct. It acts to conserve its water supply by reducing evaporation through its pores to a minimum. This it does by laying down globules of pure rubber in its cortex so that an impervious sheath results. This sheath of rubber suppresses evaporation very effectively. The rubber is pure caoutchouc, entirely free from resin and forms about 5 to 20 per cent of the dry weight of the whole plant, depending on the condition and rate of growth.

The point was stressed at the beginning of this paper that the production of rubber on our American continent at prices competitive with plantation crude was to be featured by labor saving machines. The organization in the field today that has conducted complete experimentation and has brought the cultivation of our native rubber shrub to a point where it can be grown under conditions of intensive domestication has also developed a complete system of labor saving machinery. By means of these labor saving devices, all hand labor is eliminated. The numerous operations of field work, such as nursery bed preparation, seeding, care of the plants, transference of plants to the field, harvesting and all the subsequent operations in the factory are done one and all by a complete and extensive system of labor saving machines. This machinery will be available to the small farmer and landowner who will undertake to grow guayule under the control, direction and financial assistance of this mother organization. These mechanical inventions coupled with the work of the practical plant breeder in the field and the chemist in the factory have removed the major obstacles to the development of an extensive agricultural guayule industry in the United States.

The Economical Use of Carbon Dioxide[1]

The advantage of using carbon dioxide lies in its economic aspect, and as a protective medium against oxidation of airbags it has received serious consideration by tire manufacturers. An economical process of using this gas has been developed, whereby its cost has been reduced from an average of 5 cents per tire cured, to a minute fraction of this figure. The process is applicable not only to airbags but to molded tubes and other manufacturing processes in the rubber industry.

The use of a recovery process is essential to the economical use of carbon dioxide or any other gas. Referring to the Figure 1, it will be seen that this process is exceedingly simple, comprising merely a gasometer, small compressor and expansion tank, together with the necessary piping. In practice, the operator simply brings up the pressure with CO_2 by opening valve 1, shutting it off again when the gage shows the desired pressure. Valve 2 is then opened and the pressure maintained with air. At the end of the cure, valve 2 is closed and valve 3 is opened momentarily to sniff out any air that may be in the manifold. A plant necessary for 4,000 tires costs less than $3,000 and entails no added labor.

By using carbon dioxide in this manner it is obvious that only the gas necessary is used, all leakage which may exist within the heater, due to faulty connections, is entirely of air. There is no diffusion of air into the airbag, because the diameter of the

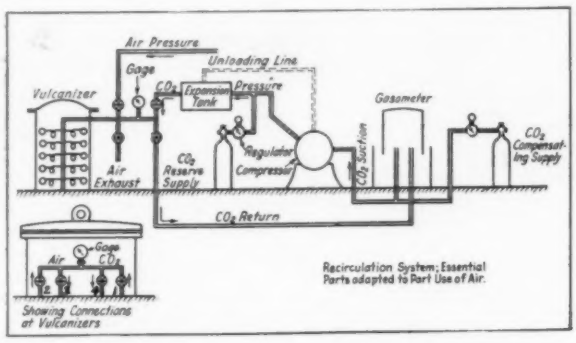


Fig. 1. Minor CO_2 Recovery System by Recirculation

valve is small. It is also interesting to note that in the case of a small leak developing in the bag the tire will be cured just the same, while with air as the pressure medium, the tire will be undercured.

[1] By Henry Minor, development manager, General Carbonic Co., New York, N. Y.

The most important facts in connection with this system are that four-fifths of the gas may be recovered and that the percentage of CO_2 in the gasometer remains high over long periods. Compared with the old method, approximately one pound of gas was

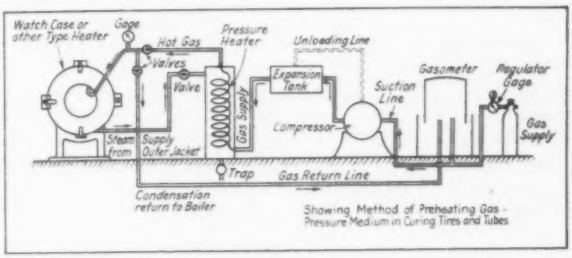


Fig. 2. Preheating Method of the Minor System

used, while today it is only necessary to first use the required amount, approximately one-half pound, and from two-thirds to four-fifths of this is recovered.

In any system, such as this, it is most desirable to have some means for checking performance. This is best and most easily accomplished by a recording gage which will record the rise and fall of the gasometer. As these fluctuations correspond with the filling of a heater or the blow-back and as each interval on the record means a definite amount of gas, a waste at any heater may be immediately detected.

As it takes longer to cure tubes with CO_2 than with steam, it has seemed of extreme economic importance to devise ways and means for accelerating the time of cure when using CO_2. There has, therefore, been devised the method shown in Figure 2, whereby it becomes possible to preheat not only the gas going to the tube, but to afterwards recover this gas for further use.

It will be noted that the recirculation or recovery system is identical with that devised for airbags, but that a pressure heater has been added. The steam for preheating purpose may be from any convenient source, but in the illustration it is shown as obtained by bleeding a small amount from the vulcanizer. This may have advantages, particularly during the early part of the cure, in relieving the so-called static condition and by increased agitation and circulation within the heater, effecting a much greater heat transfer from the steam to the mold, while at the same time furnishing the B. t. u.'s to the gas to accelerate the cure from the inside. A watch case type heater is shown in the illustration, but this can be of any type.

A Modern Rubber Reclaiming Plant

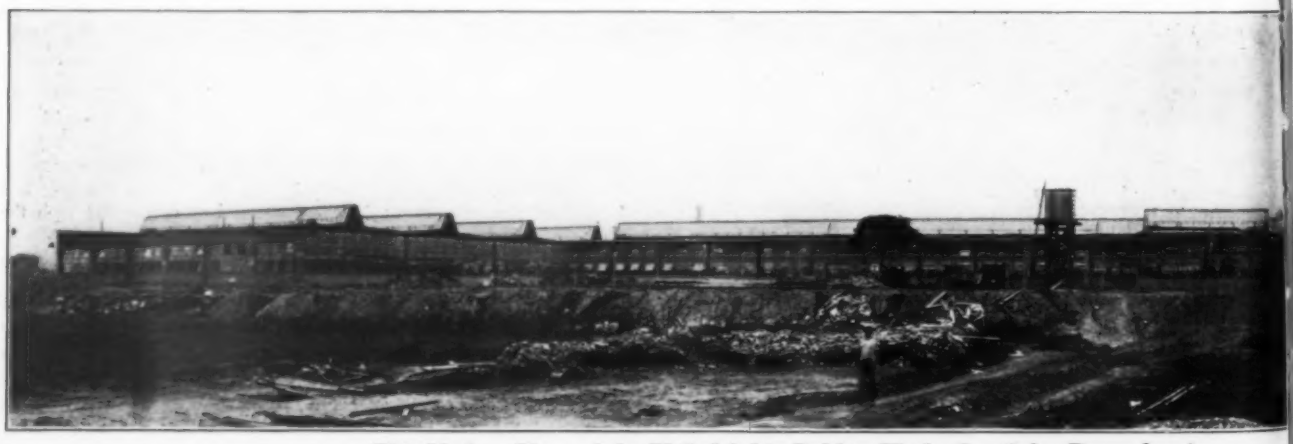
Increasing Demand for Reclaims—Two Million Pound Reclaiming Plant—Storage Yard and Factory Buildings—General Process Equipment

THE rapidity with which the price for crude rubber advanced in 1925 created a situation demanding relief. This was obtained in part by the increased use of reclaimed rubber, but the demand greatly exceeded the reclaiming capacity. Rubber chemists were alert to the situation and studied the technical and economic possibilities of reclaim as a substitute for crude rubber under improved compounding conditions and facilities. These researches, notably those by Bierer and Davis, Wiegand, Cranor and others, demonstrated how reclaim can be used to replace crude rubber to a marked degree without sacrifice of technical value in the product even in the case of tires or inner tubes where tensile properties are very important.

Reclaim Demand Increased

The situation plainly called for increase of manufacturing facilities on the part of every reclaimer. The confidence of one large company in the future demand for reclaim by the rubber industry is shown by the erection of a new plant near Philadelphia, Pennsylvania, representing an investment of $2,000,000, and with an output capacity of 2,000,000 pounds per month or 40 tons daily.

The general arrangement of the plant, which has recently been placed in operation, is shown by the accompanying illustration. Factory sidings connect directly with the adjacent tracks of the Pennsylvania and the Philadelphia & Reading Railroads which afford excellent facilities for freight movement to any portion of the country. The eastern seaboard location specially favors service to New England points and for export trade.



This Modern Plant of the Philadelphia Rubber Works Co., Oaks, Pennsylvania,

The chief varieties of scrap reclaimed at this plant are automobile tires and inner tubes. In the order of its progress through the works the movement of the material follows a well coordinated plan.

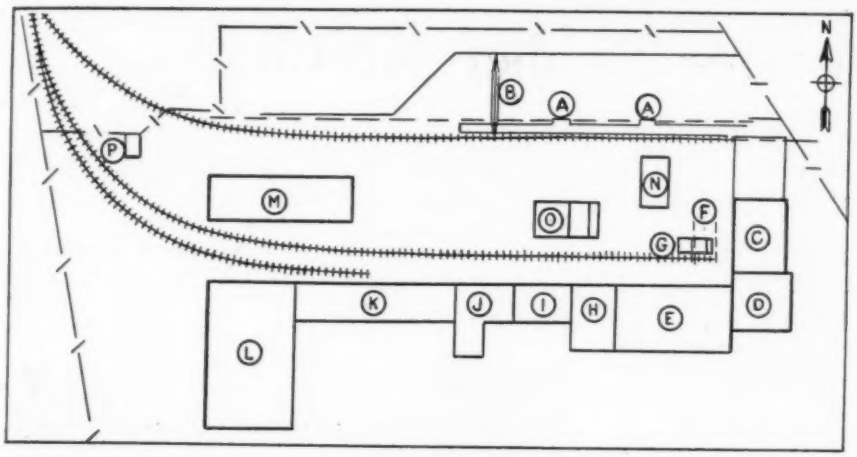
Scrap arrives at the works by rail. The track extends the entire length of the yard between the crane and the factory buildings. The material is unloaded by hand into boxes in which it is weighed. If debeaded for immediate use, this is done by power in a series of alcoves *A* built in the crane foundation wall. If the tires are to be stored they are raised and transferred by a 2-ton Gantry crane *B*, of 60 foot span with two 35-foot cantilevers. The crane handles the scrap to or from any point in the storage yard.

From storage the tires are conveyed to building *C* where is located debeading machinery and facilities for removal of the valves from inner tubes. Here the stock is reduced to small pieces by power cutters and elevated and conveyed to building *D* where roll grinders reduce it to ¼ to ½ inch size. In this state it is carried by conveyer past the magnetizers for removal of all iron and steel particles before it is loaded into the digesters in section *E*. Here it undergoes digestion in a solution of caustic soda for the removal of free sulphur and destruction of the fiber.

The drum caustic is delivered by overhead crane railway *F* to storage space *G* adjacent to the concrete solution tanks. From there it is piped to the digesters at *H*. The process of digestion proceeds for varying times at about 150 pounds steam pressure according to the nature of the scrap under treatment. The digested stock is discharged into tanks below in the same building where it is cleaned free of sludge by a thoroughly effective washing system.

The washed coarse rubber is floated through a system of riffles or shallow channels containing low cross-bars or dams placed at frequent intervals. These impede the flow of the ground rubber sufficiently to allow the settlement of sand back of the dams. The clean rubber from the riffles is freed from most of its water for convenience in handling.

The fine rubber mud that escapes in the preliminary washing plant is discharged into clarifiers. In these special settling tanks the fine rubber is deposited that otherwise would be carried off in the flow of wash water. The rubber sludge or mud from the clarifiers requires handling by special methods and apparatus to safeguard against loss of valuable material in the subsequent mechanical processes employed in utilizing it appropriately. The rubber processing and finishing departments are housed in sections *I*, *J*, and *K*. From the latter section the finished products proceed to the warehouse *L* from which rail shipments are made.



(A) Debeading Alcoves. *(B)* Gantry Crane. *(C)* Valve Removing and Cutting. *(D)* Roll Grinders. *(E)* Ground Stock Storage. *(F)* Crane for Caustic. *(G)* Caustic Storage. *(H)* Digesters. *(I)*, *(J)* and *(K)* Rubber Processing and Finishing Departments. *(L)* Stripping Room, Offices and Laboratory. *(M)* Mechanical Department. *(N)* Storage. *(O)* Boiler and Pump House. *(P)* Plant Entrance

Plan of the Philadelphia Rubber Works Co.

Offices for the operating staff and the laboratory occupy the southerly end of the warehouse building. The laboratory facilities are thoroughly modern and complete. The work is departmentalized for chemical and physical control of the processes and products and special conveniences are provided for development and research.

Both large and small manufacturing plants, particularly those in continuous operation and those under constant process improvement, require a mechanical department for machinery repair, etc. In the uresent plant, building *M* is devoted to a fully equipped machine and millwright department containing every facility for handling emergency repairs and additions to equipment.

Other auxiliary buildings are the storage room *N*, boiler and pump house *O*, supplying steam for the digesters and power to circulate the wash water. In the same building is located the switch board for the control of the current supplied from a public service power station. The pumping station located outside the factory yard has a capacity of 3,000 gallons per minute. It elevates water from a nearby creek through an 18-inch main to a 200,000 gallon storage tank in the plant. Half of this capacity is reserved for fire emergency. The immediate plant area is enclosed by a high wire fence, the entrance and exit being guarded at *P* by a gate house and time office.

For the most part this reclaiming plant is single story brick construction, and contains the most approved modern equipment. It is a model of effective arrangement for volume and quality of output and is an important addition to American rubber manufacturing facilities.

Has a Daily Capacity of Forty Tons of Reclaimed Rubber

AUGUST REPRESENTS DECLINE IN RUBBER GOODS EXPORTS

During August all the main classes of rubber goods showed declines in both volume and values of exports, the total shipments of the month having a value of $4,296,696, as compared with $5,056,695 for July. The outstanding feature of the month's trading, according to *Commerce Reports*, was the consistent lowering of unit values, many representing new low marks for the year. Among these were the $2.55 figure for automobile inner tubes, $2.20 average for rubber boots, $0.61 a pound price for rubber belting, $1.23 a pound figure for rubber thread, and the $2.49 a dozen average on rubber gloves. In this general falling-off of trade, one class of goods indicated an exception, the rubber boot exports for the month establishing a new high mark for the year at 118,420 pairs, value $260,488, while the shipments of rubber shoes totaled 239,207 pairs, value $224,493, with a unit value of $0.938, next to the highest figure for the year.

DURING THE TWELVE MONTHS ENDED JUNE, 1926, THE UNITED States has exported 1,725,321 pounds of rubber thread, value $2,234,480.

Lubrication of Rubber Machinery

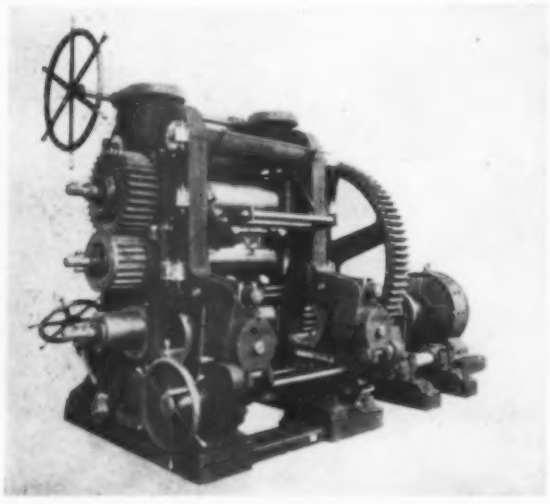
Sight-Feed Lubrication of Mill and Shafting—Ring Oiling High Speed Shafting and Motors—Lubricating Heavy Calenders and Hot and Heavy Bearings—Drive Gearing—Force-Feed Systems—Choice of Lubricants

ENGINEERING authorities estimate that 40 per cent of the power produced annually in the United States is lost through friction. Stated in terms of money this loss is placed at $750,000,000, of which the proportionate share of the rubber industry is $11,000,000. Great as these sums are they do not include losses from excessive wear of overheated bearings causing shutdowns, costly replacements, labor repair charges and suspended production. Efficient lubrication is thus a matter of great economic importance. Its numerous phases have engaged the attention of engineering and chemical experts whose study has resulted in the development of practical devices for applying lubricants unfailingly and of appropriate grade to meet the need of every machine whatever its speed or bearing pressures.

Rubber Mill Machinery

The machinery employed in the rubber manufacturing industry is of many kinds, from main line shafting moving heavy mills and calenders, to electric motors operating light, swift running sewing machines, etc. The problems of heavy machine lubrication in rubber mills relate chiefly to the roll-neck bearings of crackers, washers, mixers, refiners and calenders; the teeth of driving, connecting and speed reducing gearing; the bearings of counter shafts and electric motors, etc.

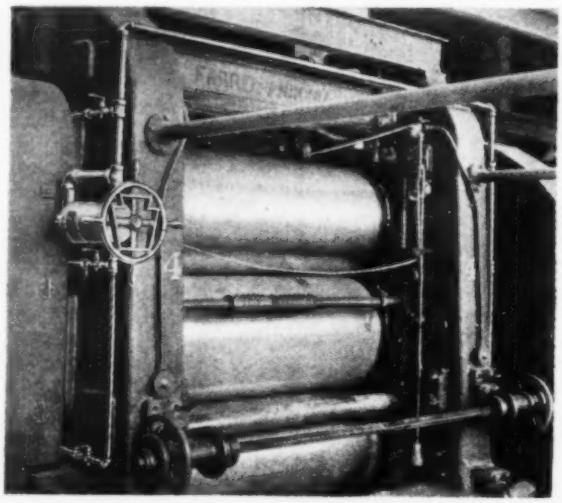
The lubrication of rubber plant machinery is properly in charge of the factory engineering department which determines the quality of the lubricant, its rate of feed and the means for its application. The service conditions encountered are particularly strenuous because of the sudden peak loads imposed by the work. Also the bearings of rubber mills are often subjected to abnormal pressures by the rolls being set tightly together in working stiff



Vaughn Calender with Sight Feed Lubricators

batches. Excessive pressure is also caused by the expansion of the rolls and roll necks when they exert their working strains against cold gum or a firm rubber mixture.

These normal operating conditions of slow speed, heavy pressure and high temperature, require the use of an extra heavy gravity oil in order to form and maintain an adequate lubricating film between the journals and their bearing surfaces. It is important also that the oil be kept from coming in contact with the material



Keystone Pressure System Applied to Farrel Calender

passing through the rolls, therefore, the oil feed must be reduced to a minimum and only a high grade oil has sufficient lubricating value to render satisfactory service under these conditions.

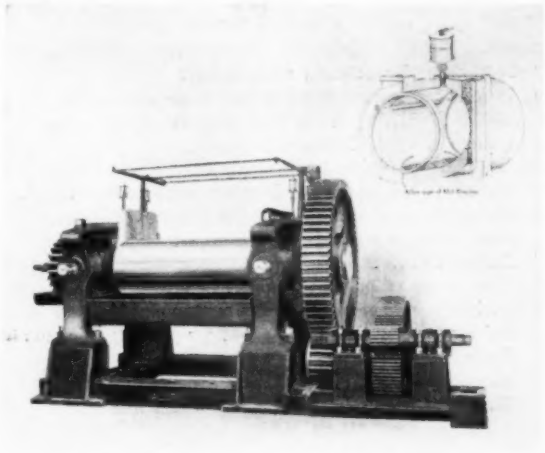
A simple means of oil lubrication consists in supplying it by sight feed oil cups or by wick oil feeders. For best results under this plan, the housing may be packed with long fiber wool waste saturated with the correct lubricating oil, after the manner in which the axle boxes of railway cars are packed. The function of the wool waste is to distribute the oil evenly over the journal surface and constantly maintain the oil film.

Calenders

The exceptionally fine and close adjustment required in the performance of calenders and the importance of maintaining uniform gages of product call for correct lubrication for proper functioning of the moving parts. More harm can result from improper lubrication for a short period than by years of normal wear when the calender is correctly lubricated. Calenders are always fitted with special sight feed lubricators delivering oil through individual leads to grooving in the roll bearing brasses. The oil used on calenders must be of such body as will permit reliable regulation of feed from the oil cups at room temperatures. Also it must be capable of being easily drawn into the pressure area of the bearing and maintain the lubricating film with minimum feed of oil. Leakage of oil from the ends of the bearings to the face of the rolls, due to faulty feeding, is certain to spoil the work of the calender.

The proper lubrication of calenders is considered so important that one of the leading builders equips all new heavy duty calenders, and also some lighter special ones, with a force-feed

pump lubricating system which supplies a definite number of drops a minute to each bearing. The pump is a sight feed arrangement so that the number of drops can be readily observed and adjustment is provided for quantity regulation. The pump used will



Allen Mill with Special Oiling System

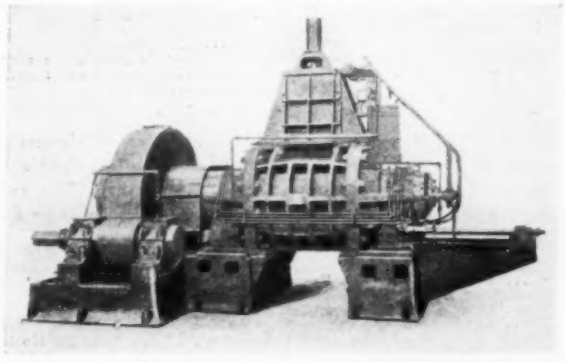
handle very thick fluids making it possible to use a heavier lubricant than with the sight-feed lubricators formerly in universal use.

Hot and Heavy Bearings

Where rubber mills are run very warm and the bearing pressure is heavy, greases are often preferred to heavy oil for lubricating. As an example, where the rolls are heated by steam at 100 pounds pressure the roll necks become so hot that their successful lubrication is possible only by the use of very heavy thick heat-resisting graphite grease. Even under ordinary milling conditions grease can probably be used with less waste than oil because it is retained longer in the boxes and works well for slow speeds and heavy pressures.

Drive Gears

Open type driving gears are lubricated by applying with a hand swab a very heavy viscous lubricant to resist the heavy working pressure exerted on the teeth. The lubricant must also be sufficiently adhesive to resist being thrown off during the revolution



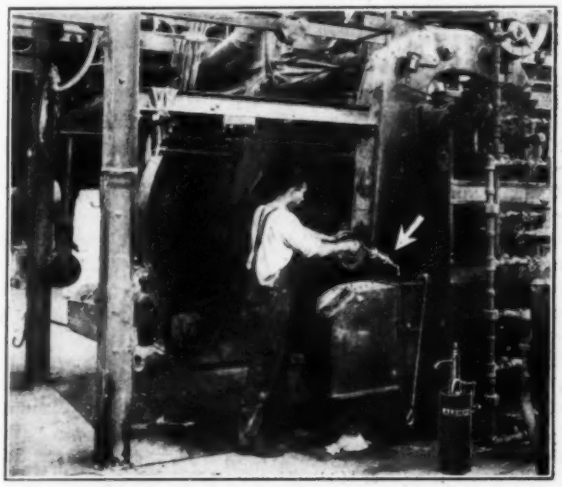
Force-Feed System Applied to Banbury Mixer

of the gears. One of the best oil products for open gears requires heating to facilitate its uniform application. Connecting gears are commonly provided with an oil or slush pan supported below the gears. Sufficient oil is kept in the pan to permit the teeth of the lower gear to dip about an inch below the surface of the oil. The lubricant picked up by the teeth in this way is transmitted to the teeth of the meshing upper gears.

Force-Feed Lubricating Systems

The application of a force-feed system for machinery in any branch of industry yields results in several ways: (1) a direct saving by its installation and use in the reduction of the expense for grease and oils; (2) saving of life and personal injuries by permitting lubrication of moving machinery without danger to the employe; (3) reduction of shutdowns to a minimum, assuring maximum machine efficiency.

One of the simplest force-feed systems comprises a portable hand power grease gun or compressor containing a supply of the lubricant; a conduit, rigid or flexible, provided with a quick detachable coupling; three fittings, which are check valve nipples screwed permanently into the housings. From the compressor unit, grease or oil is forced into the bearings through each fitting in succession under a pressure of 300 to 5,000 pounds per square inch. In most cases the operator can see the grease flow from the



Portable Alemite System Applied to a Calender

housing, thus providing an inspection of each bearing at every greasing.

A second force-feed system in extended use comprises a lubricator connected with a manifold outlet header which is a central point of safety from which bearings located in inaccessible and hazardous places may be lubricated with grease through a system of pipe lines leading from the header to the bearings. The system is adequate to discharge grease through lengths of header pipes and leads remotely located from the lubricator.

There is a limitation to the number of leads from a "header" line set at 175 leads. The leads may be of varying length from a few inches long to 25 feet or more. The designation "grease station" is applied to the lubricator, the header line, offsets and all accessories attached to the lubricator. Several machines may therefore be served by one grease station. Experience has shown that the most practical range of operating pressures are from 20 to 40 pounds, regulation of the valves is adjusted to these pressures.

In the latest development of this system of force-feed lubrication the tendency is to substitute for the central grease station and manifolds a single pipe line system with branches. This change makes for greater simplicity and positiveness in attaining the lubricating effect.

Choice of Lubricants

The choice of the correct lubricant for rubber machinery is practically decided by the plant engineer. The quality of the

lubricant and rate of feed depend upon his judgment aided by the expert advice and assistance afforded by the manufacturers of lubricants and the means for applying it properly.

Grease for rubber mill lubrication is made in many grades of density from a hard brick down to semi-solids and in liquid form for ring-oiling bearings operating under extreme heat conditions. In general, grease is used in heavy bearings and for slushing gears.

Makers of rubber machinery generally recommend either grease or oil lubrication and equip their machines accordingly. Where oil lubrication is preferred careful selection of special grades is made without specifying too many varieties. Steam cylinder oil compounded with a very small amount of acidless tallow is found to be excellent for the heated journals of a calender and will maintain its film under very heavy roll pressures. A crank case oil is frequently used under ordinary milling conditions of breaking down rubber, mixing and warming it for calendering or tubing.

The subject of the correct lubrication in the rubber mill is large and important, involving the best for the purpose both in lubricant and system of application. In any case its favorable solution represents important savings in plant operation beside conservation of machinery and power.

Legal Decisions

Customs Appraisers' Decisions

No. 712.—Protest 153459—G of Alexander Industries, Inc. (New York). Merchandise invoiced as rubber sponge toys classified at 70 per cent ad valorem under paragraph 1414, tariff act of 1922, is claimed dutiable at 25 per cent under paragraph 1439. Opinion by Sullivan, J. The rubber sponges in question were held dutiable under paragraph 1439 in accordance with stipulation of counsel and on the authority of G. A. 8867 (T. D. 40424), affirmed in United States v. Globe Overseas Corporation (13 Ct. Cust. Appls., 10; T. D. 40849).—*Treasury Decisions*, Volume 50, No. 15, page 32.

No. 743.—Protest 144527—G of Charles A. Redden (New York). Printers' blankets classified as manufactures of cotton under paragraph 921, tariff act of 1922, are claimed dutiable as manufactures in chief value of india rubber at 25 per cent ad valorem under paragraph 1439. The printers' blankets in question were held dutiable under paragraph 1439. Abstract 49253 followed.—*Treasury Decisions*, Volume 50, No. 16, page 39.

Appeals to United States Court of Appeals

No. 1784.—In re The Mason Tire & Rubber Co. Court of Appeals of the District of Columbia. Decided March 1, 1926.

The Mason Tire & Rubber Co. on July 3, 1923, filed in the Patent Office, an application to register the words "Safety First," as a trademark for use on such goods as belting, hose, machinery packing, nonmetallic tires and rubber-tire casings. As the phrase "Safety First" had been previously appropriated by the National Council for Industrial Safety and other associated organizations, it was decided by the Court of Appeals that this motto could not be used in conjunction with some distinctive figure or design. The decision of the Commissioner was therefore affirmed.—*Official Gazette*, Volume 350, page 243.

Patent Suits

1,411,231, M. L. Weiss, vulcanization accelerator, appeal filed Mar. 18, 1926, C. C. A. (3d Cir.), Doc. 3470, Dovan Chemical Co. v. Corona Cord Tire Co.—*Official Gazette*, Vol. 351, p. 6.

1,482,952, J. H. Stedman, reenforced-rubber flooring and process of making same, appeal filed April 14, 1926, C. C. A. (3d Cir.). Doc. 3482, J. H. Stedman v. Puritan Rubber Mfg. Co.—*Official Gazette*, Vol. 351, p. 6.

887,997 (D. C. N. Y.) The Caldwell patent for improvement in vehicle tires, claims 4, 7, 9-11, and 13-15. Held not infringed. Caldwell v. Firestone Tire & Rubber Co., 13 F. (2d) 483. —*Official Gazette*, Vol. 351, p. 1.

Rubber Trade Inquiries

The inquiries that follow have already been answered; nevertheless they are of interest not only in showing the needs of the trade, but because of the possibility that additional information may be furnished by those who read them. The Editor is therefore glad to have those interested communicate with him.

NUMBER	INQUIRY
879	Machinery for celluloid manufacture.
880	Process for cementing soft rubber to wood or steel.
881	Device for testing viscosity of rubber benzol solutions.
882	Manufacturer of Messer bias cutter.
883	Importers of golf balls.
884	United States agent to sell compressed rubber wheels.
885	Manufacturer of cement tube filling machine.
886	Manufacturers of rubber gloves and aprons.
887	Rubber thread manufacturers.
888	Manufacturers of sponge rubber.
889	Dealers in rubber compounding materials.
890	Rubber printing plates to be used for printing on cotton bags.
891	Dealers in crude rubber.
892	Manufacturers of hollow rubber balls.
893	Makers of rubber printing rolls of offset blankets.
894	Source of supply for glucose.
895	Manufacturers of bulbs for perfume atomizers.
896	Equipment for manufacturing dipped goods.
897	Manufacturers of hollands.

Foreign Trade Information

For further information concerning the inquiries listed below, address United States Department of Commerce, Bureau of Foreign and Domestic Commerce, Room 734, Custom House, New York, N. Y.

NUMBER	COUNTRY AND COMMODITY	PURCHASE OR AGENCY
22,259	Finland. Toys	Agency
22,268	Turkey. Overshoes (galoshes)	Agency
22,269	Brazil. Balloons, bathing caps, toys	Agency
22,270	Switzerland. Cheap bicycle tires	Agency
22,289	Iraq. Garters and suspenders	Purchase
22,314	Uruguay. Sheet-rubber packing	Purchase
22,334	Austria. Rubber goods	Agency
22,348	South Africa. Rubber lined hose	Purchase and agency
22,433	Manchuria. Automobile tires	Purchase
22,434	Germany. Automobile and truck tires	Agency
22,435	South Africa. Auto and motor cycle tires	Agency
22,436	Mexico. Bathing caps, baby pants, bibs, aprons	Agency
22,443	Brazil. Auto tires and tubes	Purchase and agency
22,444	South Africa. Men's suspenders	Purchase
22,450	Germany. Rubber goods, rubber scrap and reclaims	Purchase
22,457	Rumania. Belting, 20 to 300 mm. in width, of various plies	Purchase
22,471	Canada. Rubber flooring	Agency
22,511	India. Rubber erasers	Purchase and agency
22,513	Germany. Tennis or sport shoes with rubber soles	Purchase
22,514	Germany. Rubber specialties, rubberized fabrics, sanitary goods	Agency
22,540	Germany. Overshoes, snow boots, tennis shoes	Purchase and agency
22,562	Brazil. Automobile tires and tubes	Purchase and agency
22,565	Brazil. Automobile tires and tubes	Agency

Foreign Trade Circulars

Special circulars containing foreign rubber trade information are now being published by the Rubber Division, Bureau of Foreign and Domestic Commerce, Washington, D. C. The publications which give details of the rubber industry in some one country are marked with an asterisk.

NUMBER	SPECIAL CIRCULAR
*1276	"Italian Tire Exports During the First Six Months of 1926."
1277	"Tire Exporters' Weekly News Letter."
1280	"Crude Rubber News Letter."
1281	"Comparative Tire Exports from the United States, Canada, United Kingdom, France, Italy, and Germany During First Six Months of 1926."
*1282	"Canadian Tire Exports During August, 1926."
*1284	"Market for Machinery Belting in Turkey."
1285	"Rubber Specialties Weekly News Letter."
*1286	"Italian Market for Rubber Specialties."
*1289	"British Exports of Automobile Casings During August, 1926."
1291	"Rubber Footwear Exporters' Monthly News Letter."
1293	"Tire Exporters' Weekly News Letter."
*1295	"French Tire Exports During Month of August, 1926."
*1297	"British Rubber Imports and Reexports, First Half 1926."
1299	"Crude Rubber News Letter."
1300	"Tire Exporters' Weekly News Letter."

Waste Reduction Engineering

ORGANIZED waste reduction work in rubber factories became of interest immediately following the war due to the wasteful handling of materials occasioned by stress production during that period, and the lack of advancement in the development of new machinery and methods. In many cases, efforts were directed not so much toward establishing better standards of waste tolerance, but toward restoring those which existed just prior to the war era. While salvage work was broadened in scope and brought to a higher point of efficiency, the major efforts were directed toward preventing waste at the source. This work required correlation of all production functions toward the end desired, as well as constructive engineering along the lines of improvement of processes.

It will be recalled that these years, 1919 and 1920 particularly, were days of relatively high material costs. Rubber hung pretty steadily around 50 and 60 cent levels, not high in view of past experience, but still not a cheap commodity; cotton was expensive, cord fabric in the Sea Island grades then in use, bringing as high as $2.15 a pound; compounding ingredients were few in number, some of the essential ones like carbon black being scarce and hard to procure; accelerators were not developed to the point they now are; cures were longer; scrap and reclaim brought fancy prices; in fact material losses in the form of seconds, scrap, etc., were sizeable and called for an investment to combat them.

The year following saw this situation radically altered. Rubber dropped to 11 cents; cord fabric came to be made of American cotton carded and sold for 60 to 70 cents a pound; scrap and reclaim went begging. This changed the complexion of waste reduction work considerably; in many cases where it paid to take extra safeguards under the former scale of values, now it figured that dollars were being spent to save quarters. Much of the intensive reduction work had to be abandoned. Safeguards and control units, particularly on process waste, such as cutting fabric parts for shoes, and carcass trim on tires, were retained, but much expensive salvage work was eliminated for cheaper ways of utilizing waste material.

From this extreme condition of 1921, the pendulum has gradually swung the other way. Now that plantation rubber supplies will be reduced by 20 per cent, according to the new restriction ruling, rubber manufacturers have got to face this material waste proposition again in a very decisive way. For the unnecessary loss of a pound of rubber is quite serious at this time when they are forced to face the uncertainties of artificially controlled rubber prices. Not only that, but it is very essential that the present supply be utilized to the limit.

It behooves every manufacturer, therefore, in facing 1927 to look his mill over from top to bottom, analyze every process, and investigate every condition from the viewpoint of material waste. He will find that a great many things that were safeguarded formerly have become neglected and need attention again. Of course, in very rare cases is it crude rubber that is wasted; it is usually rubber compound or rubber combined with fabric which falls out of process along the line, but the basic material is there just the same.

Perhaps it may be well to run over some of the leaks in material, common to rubber plants. After the rubber is received and the cases removed, the first process is breaking down and mixing. This brings up the problem of gum storage. Are the storage bins in shape, constructed of metal, and easily accessible so that the gum under certain conditions will not become imbedded in them, rendering it full of splinters or stuck to wrappers? Separation of slabs of mixed stock is now accomplished by talcing, but when it is returned as scrap, it is so soft that liners are used for this purpose. It is not unusual to see three or four hundred pounds of A1 compound rendered useless except for reclaim due to bad storage conditions. And in large factories especially, which have their own reclaiming plants, these losses are often lost sight of.

Pit leakage, that is, loss of rubber under the mill lines, used to be more common when washing was general practice, but it is still prevalent, nevertheless, and with wild rubbers coming back into use, needs to be controlled. This slow leakage of bits of compound becoming enmeshed in gears and dropping on the floor seems small, but ask the sweeper who takes care of your mixing line section to see how much he picks up in the course of the day. The correctives for this are, of course, better equipment and education of employes. The same condition is present in a press-room. See how much uncured compound covered with grease, dirt, and slime, the sweeper hoes out of the plunger pits every day. This loss is caused by careless, unthinking pressmen. Their supply of material is plentiful; if one biscuit drops on the floor, it does not matter to them; it is much handier to take another one than to pick it up.

Poor planning is a common cause of waste due to faulty operation of the material control system. Over-commitments of raw material and over-production result in surplus parts lying idle in the plant where they may deteriorate or become obsolete because of changes in styles and specifications. The prevalence of this condition varies with the branch of the rubber industry. It will be found more in shoes, for instance, than in tires, as the units handled are smaller and greater in number. Visit the cutting department of any shoe mill, look under the picking tables, note the condition of the surplus parts, make an estimate as to how long some have been there, take note of the tack in the compound. Then drop into the making department just after quitting time. See how many parts each maker has left over after the day's work, estimate how many are capable of being used, follow the matter up and see how many are used and how many find their way into the scrap can. These are rubber footwear waste problems of long standing. They are not to be solved by systems wholly; human engineering is a factor here. But they are important problems, for they take their toll of wasted rubber every day.

Bad order machinery and poor equipment are frequent causes for waste which go on indefinitely unless brought up objectively for remedy. How often in the frictioning or coating of a piece of fabric, for shoes, tires, or belts have we seen a fine piece of cloth, well put up, being impregnated with a workable compound well handled, yet being wound up in an old, many-seamed, rotten, dusty, plain cotton liner? Not only is the tack taken out, but wrinkles are imbedded in the fabric rendering part of it useless. Rubber manufacturers are just waking up to the fact that a liner is a piece of equipment and that is one advantage of treated liners. They stand the gaff, preserve the tack, and prevent waste. Care of calenders is very important; are the boxes tight; the rolls true and even; the water joints tight; the starting and stopping devices of the latest type? Economical work cannot result if they are not.

Gage is a very important factor in the present rubber crisis. Having once determined what he wants to give in thickness to the different parts of his product, the manufacturer should take every precaution to run to that specification. If he runs over gage for a period the loss in rubber becomes terrific. And there is only one way to control this; check, check and then check some more. It pays.

The question of the most economical speed at which to operate machinery will inevitably come up in a discussion of this kind. When the stress was removed from the field of material waste in

1921, it was concentrated on labor and machinery, and many rubber processes have been improved and entirely revamped. But supposing a processing machine can be operated at 25 cents a unit cheaper at an increased speed, but in doing so causes an additional material loss of $1? Waste engineering must ferret out these things and bring them up for correction.

Process waste has probably received more attention than any other kind, as it is always present and in many branches of the rubber industry as high as 20 per cent of the material falls out in this manner. But because it is a recurring loss any reductions in its normal rate may effect great savings. Considerable study can be devoted profitably to the most economical measurements of units of raw material, and the most advantageous ways of placing or interfitting patterns and dies. The shape of parts may often be altered without detriment to the product for the sake of greater yield of perfect parts per given volume of raw material.

Workmen engaged in processes where the waste is unavoidable, yet variable according to their skill, sometimes may be paid profitably by a differential piece rate or bonus which increases in inverse proportion to the percentage of waste. The cutting departments in rubber shoe plants follow this idea generally.

Molding rubber goods brings up the problem of overflow. It is admittedly impossible to mold rubber articles without some overflow with the possible exception of the airbag cure cord tire, where it is at a minimum. And there is the ideal condition which is rarely approached in practice. But steps have got to be taken in this rubber market not only to approach it, but to keep the waste at the low point day in and day out. This requires engineering; to produce a piece of rubber of accurate dimensions, length, breadth, and thickness, just as the automobile manufacturer produces pistons to fit cylinders in quantity. Just enough and no more. It can be done and it is being done.

Of course, the rubber workers themselves have got to be reached in this work. And the way to reach them is through their foreman. When the figures giving the measure of his department's waste reduction effort are presented to him graphically at frequent periods, the foreman is bound to see that correctives are applied.

The first step which can be undertaken by the management is to clean up the mill and then insist that it be kept clean and neat. A clean mill is an efficient mill, and that is not putting the cart before the horse, either. Try it.

Making Safety Work Interesting

Accident Prevention Measures of Prominent Rubber Company Afford Valuable Lesson

Many rubber manufacturers who freely admit the merits of safety work do not press it to the utmost advantage because they find it hard to enlist and sustain interest among the entire factory personnel. The difficulty may be due to the fact that such work has not been pursued earnestly enough, that it has been left to zealous but non-resourceful employes, and the meager results have made some employers wonder if the mere installation of the customary mechanical safeguards and the conspicuous posting of warning notices would not serve just as well as a fussy, nonproductive "safety engineering department." Or, perhaps, they have been discouraged because some others have tried an elaborate, unsuitable accident prevention program and finally discarded it.

The supervisor of safety of the United States Rubber Co., Ernest W. Beck, whose experience covers the corporation's forty factories with their 40,000 employes, says that the reason why so many safety schemes go awry is because those intrusted with the work and those who engage them do not go about the task in the right way. Just as a company's products must be cleverly and persistently advertised, so must the message of safety be delivered. There must be no let up. The safety man must plan continually to develop novel, attractive features to promote and maintain interest in safety. Like a sales and advertising manager, he must keep his products, ideas, in the minds of every employe, developed along safety lines.

Many ingenious plans are pursued by the big company to avert avoidable accidents. In one large rubber shop four national groups were organized into "armies" and the friendly rivalry among them, directed by tactful foremen, resulted within a month in such a notable reduction in casualties and mishaps, with coincident improvement in production and in direct money-saving, that the factory manager heartily complimented all concerned on their cooperation.

In another rubber plant considerable interest was maintained by means of a monthly drawing for a gold piece, the prize going to the department that had the best accident record, and to be later allotted to the man holding a lucky number. At the presentation encouraging remarks would be made by the general manager.

Contests for the best "Do" and "Don't" slogans also stir up much interest. A safety pennant on a flagpole may indicate that on the preceding day no lost time accident occurred. A bulletin board at the base of the pole can give the brief story of an accident and show departmental safety records. Employes try to keep the pennant flying continuously. Competition for factory or department trophies have proved successful.

Mr. Beck urges the employment of a safety engineer in every works, all-time in a large plant and at least part-time in a small one. He should be chosen for special qualifications, and if he be a good mixer he should be especially helpful in stirring enthusiasm. He should study safety work in other factories, attend safety conventions, and have periodical conferences with and seek the continual cooperation of foremen, without whose aid the best safety plans may avail but little. He should be able to organize an effective safety committee, preferably headed by an executive and having fair employe representation, all working in accord with the industrial relations manager, plant engineer, and factory manager. A sub-committee of a factory council, aided by "safety boosters" in each department, can often handle the problem effectively.

Brief letters to new employes advising safety first have been found beneficial, also "drives" or special campaigns, reminders on gates, stairways, or in pay envelopes, safety motion picture films, and the distribution of safety magazines. Employes are urged to report even the smallest accidents, and in bulletins it is advised that days lost make a stronger impression than a change in the severity rate percentage.

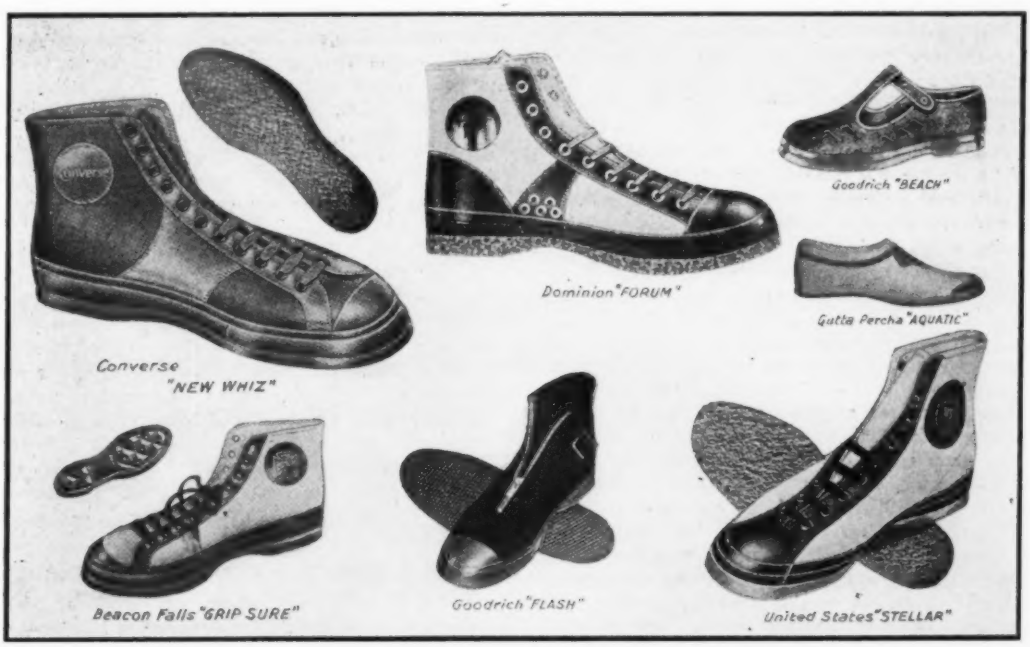
During the past three years a systematic safety contest has been conducted among United States Rubber Co.'s factories, and the results show marked humanitarian gains. The economic advantages have also been striking. In the first year the total expenditure, including the reserve for unpaid claims, was reduced over $38,000; the cost per $100 of payroll was reduced by 45 cents; the severity rate was reduced from 1.42 to 1.05; a reduction of over 36,000 was made in days lost; and the number of compensable accidents showed a 16 per cent reduction. Still further improvement has been effected in the past two years, even despite "revision upward" in many employe compensation laws.

The 1927 Tennis Line

Lower Prices Rule—Survey of the Producing Companies—Renewed Demand for Product—Distinctive Features—Color Trends—Leather Novelties—Analysis of Competing Shoes—Canadian Numbers—Specialties

THE rubber soled canvas footwear line for 1927 is now being sampled to the retail dealers, jobbers, chain store, and mail order buyers, carrying lower prices than a year ago, based on the drop in the crude rubber and cotton markets. Advance information from the field indicates that the line is being exceptionally well received, and early forward bookings point to record business when the mills swing from winter to summer production in January.

The tennis line is a valuable portion of the rubber footwear output. Government figures for 1925 show that of the 82,078,137 pairs of rubber footwear manufactured during that year, 24,999,932 were classed as rubber soled canvas shoes, and of the total production value of $119,122,826, $23,818,314 was tennis. With some mills the line forms a larger part of the output than with others. The United States Rubber Co., has concentrated the manufacture of "Keds" at the National India Rubber Co., Bristol, Rhode Island, although some production is still made at the Lycoming



Tennis and Sport Shoes for 1927 Reflect New Style Trends

Rubber Co., Williamsport, Pennsylvania. The Hood Rubber Co., Watertown, Massachusetts, runs a very large tennis ticket the year round, carrying some 20,000 pairs daily during the fall season and attaining an output of 40,000 pairs a day during the spring. A goodly share of this output is exported.

Of the smaller companies, Converse Rubber Shoe Co., Malden, Massachusetts, has been in the tennis business for many years, specializing in quality numbers for basketball and other sports. The B. F. Goodrich Co., Akron, Ohio, added tennis to its line several years ago and has a more complete list for the coming year. La Crosse Rubber Mills Co., La Crosse, Wisconsin, makes a good volume of the lower priced shoes with quality products as well, and Cambridge Rubber Co., Cambridge, Massachusetts, has attained a big production of lower priced shoes, attractively gotten up and well standardized. Servus Rubber Co., Rockford, Illinois, started operations in 1922 with a line of tennis as the sole output and has just begun to branch out into gaiters and heavy footwear. The company has been very successful in marketing popular priced shoes through national advertising. Other plants which manufacture tennis are Bourn Rubber Co., Providence, Rhode Island; Tyer Rubber Co., Andover, Massachusetts; Lambertville Rubber Co., Lambertville, New Jersey; and Beacon Falls Rubber Shoe Co., Beacon Falls, Connecticut. The Firestone Footwear Co.'s line has been enlarged and is now quite a factor in the field.

The recent slump in raw cotton, coming as it did after the line had been priced for next year, will be a big help to the manufacturers in making a profit on the highly competitive shoes, provided there is not a recurrence of last year's rubber market. Crêpe soles are retaining their popularity but their cost becomes prohibitive when rubber is high. Nearly 10,000,000 yards of duck, drills, enameling ducks, and sheetings will be consumed in 1926-27 in the manufacture of tennis shoes alone.

The trend toward novelties, variegated colors, and extreme styles which is prevalent in all lines of wearing apparel has hit the tennis line also and many distinct departures are noted in the new samples. Before analyzing the competing shoes in the different classes, it would be well to note some of these features.

Inspired by the overwhelming success of the "Zipper" overshoe, Goodrich has come out with a "Zip" tennis, called the "Flash." This shoe carries the "Hookless" fastner in place of the time-honored eyelets and shoe lacings and is attractively priced to the retailer at $1.90. It should have a big run.

With the idea of recapturing some of the tennis business lost to the leather shoe trade with the barefoot "Trotmoc" sandals, Goodrich has a new line of leather top sandals with crêpe rubber vulcanized soles, in brown, suede finish, and pearl ooze perforated leather tops. These are priced at $1.10 for the growing girls, 95 cents for misses, and 80 cents for the children's. They are thoroughly practical, very attractive, and are bound to capture a sizeable booking of new business.

Converse has made several new departures in colored fabrics and trimmings. Together with the usual white and brown tops, a line of gray has been added in several numbers, trimmed with colored fabric eyelet stays and ankle patches in place of the rubber trimming, and in the higher priced shoes many colored effects of genuine leather have been introduced. The advent of the new gray color may eventually prove a step toward standardization, displacing both the white and brown, thereby reducing kinds and stocks. United States has originated a closed vamp blucher style in several shoes.

Colored rubber bathing shoes are now manufactured by Miller, Converse, Hood, United States, and Tyer companies. They are a valuable adjunct to the line in that they find ready sale the year round, in Florida and the winter resorts during the winter season, and along the coast resorts of New Jersey, Long Island, Connecticut, and the rest of New England during the summer.

Displayed in the Hood catalog along with the tennis footwear line are the Hood Arrow soles for leather and turn or welt canvas shoes. These are made in 7 and 9 iron weight, sport pattern with suction cups, in black, oak, and tan. The black sole is said to outwear leather several times and is recommended for use on shoes where long wear and ability to withstand abuse is the predominating factor. The oak and tan colored soles are claimed to outwear the best of leather but will not wear as long as the black sole. Their particular field is for use on shoes where non-marking of floors is important as they will not mark the finest polished floors. They are being widely used on dress and semi-dress shoes. The oak sole is a new number this year and exactly matches the color of leather so that, when attached to a leather shoe, it gives the appearance of being leather.

Probably less changes have been made in the basketball line, which is to be expected. These shoes have been developed after years of experimentation and along the lines worked out by actual players and coaches. They are not made for style but for wear and serviceability such as adhesion to the floor to prevent slipping, weight, fit to support the arch and ankle, and other qualities peculiar to the game of basketball. Thus we have the old friends such as the Converse "All-Star" and "Hickory," Goodrich "Princeton," Hood "Greyhound," Servus Dr. Meanwell's "Intercollegiate," and United States "Comet." These shoes all carry sponge rubber heel pads, support at the shank either through an external saddle strap or internal brace, a long wearing sole compounded to a slight tackiness to insure adhesion, and are built as light as possible without removing any of the wearing qualities. The class price is in the neighborhood of $3.00.

Another class of basketball shoes for more general use and lower priced to be within reach of high school teams and other athletes whose requirements are not so rigid as the college and professional players, are priced from $1.75 to $2.50. They include the Converse "New Whiz" and "Lite Six," Goodrich "Wichita," Hood "Centre," "Whippet," "Gymshu" and "Caddy," Servus "Hercules" and Dr. Meanwell's "Athletic," and United States "Springstep."

Along the same price level is a group of shoes designed for boys' general wear and sturdily built. This class of shoe carries heavy army duck uppers, reinforced fabric foxing, sturdy outsoles, real leather trim, and is a first class article throughout. In it, is the oldtime favorite, Beacon Falls "Grip Sure," now marketed for export under that name, and the United States "Royal Tread" for domestic trade. The United States "Meteor," Converse "Broncho," and Goodrich "Haskell" are competing shoes.

The tennis line has long been incomplete on account of the lack of a shoe specifically designed for women. With athletics compulsory in the high and preparatory schools, and young women in general becoming more athletically inclined, the former practice of selling a loose-fitting boy's sneaker for women's wear has been abandoned. Converse women's "Surefoot" and "Siren," Goodrich "Gym Shoe," Hood "Co-Ed" and United States "Vogue," "Select" and "Juno" are blucher cut tennis for women, designed on special lasts and variously priced from $1.00 to $2.00. They are rapidly increasing in volume of sales.

Probably the utmost value for the money is found in the $1.50 and 90 cent classes of trimmed lace-to-toe shoes which are naturally the biggest volume producers. Priced at $1.42 cents factory are the Converse "Wizard," Goodrich "Crescent," Hood "Siak" and "NuShu," and Servus "Excel." These shoes carry a good grade of duck backed up with a lining doubled by the rubber or paste process, flannel insoles or felt composition, dual rubber foxing without fabric, and crêpe rubber outsoles. Priced at 92 cents is the utmost value ever given in a tennis shoe, a men's (all prices given are men's unless otherwise stated), lace-to-toe, trimmed tennis shoe such as the Converse "Pep," Hood "Battery" and "Starter," Servus "Top-Value" and United States "Mercury." They carry a light-weight duck, backed to sheeting, plain insole, imitation crêpe outsole, heavily compounded and run on a crêpe embossing roll, rubber trimming, and dual rubber foxing. The plain white and brown bals and oxfords are still carried also as there is a recurring demand from year to year for the plain garden variety of "sneakers."

Another athletic number which is becoming very popular is a $1.60 shoe designed for track sports such as the Hood "Trackshu" and the Converse "Racer." Other numbers of long standing are the Hood "Wurkshu," black plain oxfords for gymnasium work, and higher grade leather top work shoes with a heel and made with heavy brown duck.

The Canadian line is sampled by the Gutta Percha & Rubber Co., Ltd., Toronto; The Miner Rubber Co., Granby, Quebec; The Dominion Rubber Co., Ltd., and the Columbus Rubber Co., Ltd., of Montreal. Prices and styles follow the American trends pretty generally. Higher priced athletic shoes are ventilated by means of eyelets in the shank next to the insole, allowing the feet to breathe more freely. Crêpe soles are carried throughout the line.

This brief survey of the 1927 tennis line reveals the results of intensive work by the development men in the different mills, and indicates that the rubber companies are keeping step with style trends and opening up new markets for their products. The reward of these efforts is bound to come in the form of a bigger tennis year for 1927.

U. S. EXPORTS OF RUBBER SPORTING GOODS

United States exports of sporting goods of various classes continue to show large gains. According to *Commerce Reports*, the shipments of all types of balls reached a value for the fiscal year 1924-25 of $152,532, the figure rising for 1925-26 to $188,550. The value for the first six months of 1925 was $91,055, and for the first half of 1926, $117,246. Some of the leading markets for these goods during the first six months of 1926 were: Canada, taking balls valued at $20,162; Cuba, $14,225, and Mexico, $14,066.

The United States furnishes about 90 per cent of the athletic equipment used in Cuba; England supplies some of the golf and tennis equipment. The cheaper grades of footballs and soccer balls come from Spain. Domestic manufacture is negligible, although there has been an attempt at producing baseball equipment. Baseball is the most popular of all the sports and all supplies are purchased from the United States.

America's Future Rubber Supplies

By Samuel Wierman[1]

THE House Committee on Interstate and Foreign Commerce in its recent inquiry into foreign controls of raw materials brought out clearly the fact that, in the absence of any material change in conditions, the time when the demand for rubber would exceed the supply could not be far distant. This question of future supplies is by no means an academic subject; it is a very practical problem that must be carefully considered by manufacturers in this country. The discussion that follows is based on facts which are deduced from the available statistics. The facts assumed to be shown by the data are these: (1) that within the next ten years there will be a shortage of rubber; and (2) that the production of the present supply is controlled by one or two nations to such an extent that manipulation by government action on their part can produce changes in the market price of the crude material which may be very costly to our manufacturers. The Stevenson Restriction Act, applied in the British producing areas, brought home to the American public its dependence upon one distinct region under control of one government for a commodity so essential to our national welfare. Of the total supplies of the world's demand more than 93 per cent at present come from plantations in the Orient. Of this acreage 75 per cent represents British ownership in British and Dutch territory.

History of New Industries

The records show that most industries in the beginning give little consideration to the source of the future supply of raw materials essential to their welfare. While an industry is young and of small volume there is generally an abundant supply of raw material. It is only after such an industry grows to vast proportions that there is need to consider ways and means for ensuring adequate supplies of essential raw material. While it is true that as the raw commodity becomes scarce and consequently high priced various measures are devised to economize in it; yet, generally speaking, this is never a satisfactory solution nor does it promote an extension of uses as does a cheap, abundant supply of raw material.

An Economic Problem of Costs to Be Solved

To my view of the matter, the production of crude rubber resolves itself into a strictly economic problem of costs. From the agricultural angle it presents no particular difficulty. Throughout the tropical regions of the world there are millions of acres of land blessed with climatic and soil conditions favorable to the growth of rubber plants. The major problem is to produce crude rubber at a low cost or at least at a cost competitive with existing sources of supply. For this two factors are particularly determinative, namely, a favorable labor supply and good, cheap transportation. Happily, these two factors are capable of being developed and organized by human effort.

At this point a little stress needs to be put on a consideration which otherwise may lead to error. It is not fair to emphasize the present favorable labor and transportation conditions of the regions now producing rubber in comparing them with virgin fields. A thing that is lost sight of is that any pioneer effort in a new locality should be compared not with the Malaya and Sumatra of today, which have profited from many years of prosperous production, but with the Malaya and Sumatra of thirty years ago. At that time these regions had practically no labor and the country was fever scourged and disappointing. Even today Malaya has really no domiciled labor force; the workers are recruited from another unit of the Empire five days' distant overseas.

Another consideration lost sight of is that the possibility of large areas of cheap land and a large population of cheap labor in the same region is very remote. If the population is there, then the land is occupied by it to the exclusion of planting operations. The best that can be done is to select suitable land as near as possible to a plentiful supply of labor.

Methods for Increasing Supplies

It would surely seem that the one safe method of ensuring supplies is to begin now to plant more. All the discussions in the world become futile unless they lead to new plantings. Several modes of action are open to us; one, to cooperate with the present rubber producing countries to extend the already planted areas; and second, to open up and develop virgin areas outside the political influences controlling the present plantation regions. The first has the advantage of being in countries of political stability and years of experience behind them; although, from a military point of view, it is undesirable to place our dependence upon distant foreign countries for an essential raw commodity. The second has the disadvantages, though not without some advantage, incidental to all pioneer effort. A third possible solution is the development within the borders of our own country of rubber-bearing plants, such as guayule, which have proved themselves commercially satisfactory and capable of being grown on a favorable competitive basis.

What Is Delaying Developments

Any delay or reluctance in developing new areas for producing crude rubber must be ascribed rather to financial than to other practical obstacles. The entire rubber industry has grown so rapidly and has been so engrossed with its own expansion that little attention has been given to other world factors. This is eminently true of the manufacturing end of the industry. Speaking in a very general way and, of course, excepting individual cases, we are agreed that American finance has not accustomed itself to long time tropical investments. Up to the present American capital has played a very minor part in the production of crude rubber. Over a long period of years it has been more profitable to employ this capital in the conversion of the purchased raw material into tires and other rubber goods than to invest it in rubber plantations. Our manufacturers and consumers have, until now, been benefiting from the readiness of British capital to flow to all parts of the world for returns which were less than our financiers expect and can get right here at home. But with the change in international trade wrought by the War, our capital is now studying financial undertakings in foreign countries which formerly were never considered and is seriously thinking of entering the field of rubber production.

It is debatable whether all the din and eloquence of the last year or so of what Americans were going to do concerning their own production of rubber supplies has not been harmful rather than helpful. Up to the present all this talk has not been accompanied by visible action. The normal expansion that was to be expected in the planted areas of the British and Dutch Far East was retarded by all the propaganda concerning the millions of dollars and the millions of acres that Americans were going to employ. The effect on the present producing centers was that any vast American effort would adversely influence their own investments which, of course, is altogether mistaken. For we are

[1]Mr. Wierman has been employed as expert investigator by American interests during the past three years. He has first hand knowledge from Liberia, Malaya, the Philippines, Central America and Mexico.

pretty secure in saying that the world will be able to absorb all the rubber grown by everyone for many years to come.

A Suggested Practical Solution

Perhaps an ideal solution of the problem would be for each large rubber manufacturer to develop his own rubber plantations as is now being done by one of the foremost American companies. This would then leave a large margin for the general market. If this were done in territory under the American flag there would be removed the drawback of development in foreign countries whose legislative powers of taxation, restriction and so forth are beyond American control.

The plan I would like to see tried is one in which the American rubber manufacturers as a whole would combine to develop rubber production in more than one favorable region. An annual assessment of even one-fifth of one cent for each pound of rubber used in America would yield an amount sufficient for developing about 40,000 acres, or, say, four units of 10,000 acres in four different regions. In this project it would be advisable not to exceed 10,000 acres as an experimental unit of practical commercial value. If the unit justified itself in competition with other similar units in other rubber growing regions it would serve as a nucleus around which would grow plantations of private native ownership. It would not be long before an appreciable supply of rubber would come flowing in from these many different sources.

An Actual Experience

An illustration will better show what I mean when I say one cannot judge from a swivel chair what can or cannot be done without an actual trial in each place.

It happened in one Latin-American country close by our border. The daily wage was the equivalent of fifty cents our money. To the wage was added the daily food ration equal to fifteen cents, making the total daily labor cost sixty-five cents. The plantation being far distant from sources of supplies, it was necessary for the management to conduct a store to supply the food and other needs of the laborers and their families. By careful buying it was possible to sell supplies lower than anywhere else in the region and still make a profit of twenty per cent. For every dollar paid in wages the estate made a return of twenty cents in profit through the store. The laborers would spend every cent earned and more if they could.

Also the custom there was for each worker to plant his yearly corn crop on land allotted him by the estate. He willingly felled the jungle, burned, cleared and planted his corn. This work was done on his own time. In return for the use of the land he was required and willingly agreed to set out in the planted corn the required number of rubber plants and to care for these until the corn was harvested. This arrangement was mutually profitable. The estate had land cleared and planted to rubber at no cost to itself. Thus by a clever use of the customs of the country and the natural resources thereof an arrangement was possible which could never have been foreseen without actual experience.

There are several countries to the south of us at present with stable, progressive governments that would welcome and give all possible assistance to make successful the competitive production of rubber within their borders. The plan suggested above as to 10,000 acre units has the further advantage that if put into effect in any area it would not disturb the prevailing economic balance which inevitably leads to higher labor costs and other extravagances. As development progressed favorably, transportation and market routes would be established and the native population would quickly follow suit in their new industry. Before many years, it is safe to say, the areas under native production would many times exceed that planted by the experimental unit.

Laursen Process Vulcanizer

The Laursen process for vulcanizing inner tubes in water requires the use of a jacketed vulcanizer of special construction. The usual type in which the inner shell is stay-bolted to the outer one, does not serve the purpose for the reason that the sudden changes in temperature of the water at different stages of the process cause the vulcanizer to leak badly at the stay-bolts due to excessive expansion and contraction of the heater shells.

In the Laursen curing process the hot water used is necessarily kept continually under pressure otherwise there would be a violent evaporation attended with cooling the water and loss of heat. The tendency in operating the cure is toward higher temperatures and pressures, conditions which demand a vulcanizer of rugged construction capable of withstanding great temperature changes.

As the water enters the loaded vulcanizer for a cure it comes in contact with the inner tubes and part of the heat is absorbed which results in the water accumulating at the bottom being cooler than the last water to enter at the top. It is therefore necessary to

Biggs Water Cure Double Jacketed Vulcanizer

provide a means of forcibly circulating the water to bring it up to the required temperature. It is accomplished by admitting steam at the bottom directly into the water through a perforated horizontal pipe. The steam jets through the perforations adding heat and at the same time agitating the water until an even temperature results.

During the admission of water it is highly essential that gradually increasing pressure be obtained. Insufficient pressure at certain stages of temperature will cause defects in the goods and excess pressure at the start will cause trouble. For this reason it has been necessary to devise accessories to be used in connection with the vulcanizer that will assure the desired pressure effect.

After the water has been removed from the vulcanizer at the end of the vulcanizing period, the tubes and the entire vulcanizer body are still very hot. In order to prevent the expansion of air between the tube and the mandrel, they are cooled with water. The temperature of the vulcanizer is possibly 275 degrees F., and the cooling water used should be 210 degrees or a little less. However, under certain conditions much colder water is used which of course comes into sudden contact with the inner shell of the vulcanizer and causes a contraction greater than that taking place in the outer shell.

The construction finally perfected for the water cure process consists of an inner and an outer shell without stay-bolts. The shells are joined only at the head to form the steam cavity. In this way the two shells can expand and contract freely and leakage is reduced to a minimum.

"THE REASON WHY THIS FORM OF TEST ALONE IS 'IMPERTINENT' to the selection of shoe heel material" . . . is the corrected reading of the line in the fourth paragraph of "Comparative Resilience of Leather and Rubber Heels" that appeared in our October issue.

What the Rubber Chemists Are Doing

Rubber Compounding As An Aid to Conservation

WILLIAM B. WIEGAND, well-known rubber chemist and technologist, delivered an exceedingly interesting lecture at the Chemists' Club, New York, October 8, 1926, entitled, "Rubber Compounding as an Aid to Conservation." The principal points of this lecture are outlined below.

Rubber may be conserved by using less of it in a compound or by diluting it by the addition of oils and inert fillers. By this practice the resulting products may serve their purpose well, but these methods always reduce the quality of the product.

The efforts of the rubber compounder in the future toward reducing the necessary percentage of rubber must aim at holding up quality. Dilution of the rubber through reclaims or plastics inevitably results in decreased quality. Dilution by means of inactive powders likewise diminishes quality, but dilution of the rubber through a true colloidal reinforcing pigment such as zinc oxide and, above all, carbon black does not reduce quality but enhances it.

Measure of Quality

A definite measure of the quality of a rubber compound is afforded by its proof resilience, or the work necessary to stretch a rubber sample to its breaking point and then to break it. This quantity is called also the "energy of resilience of rubber." The rubber compounder uses a large number of so-called fillers such as whiting, barytes, etc., which class as dispersoids; also tars, pitches, oils and waxes which group as continuous phases; and reclaimed rubber. Alone these materials serve simply as cheapeners, but used in conjunction with dispersoids they act a different part.

Reinforcing Pigments

For many years it has been known in compounding practice that zinc oxide gives a very tough, wear-resisting stock, unapproachable by one of whiting or barytes. When the physical properties of these different stocks are compared the underlying principle of compounding pigments into rubber is revealed. Contrary to expectations the proof resilience or rubberyness of a compound may be greatly increased by the addition of a true colloid such as carbon black which itself is non-elastic, chemically inert, and without resilience. In current practice rubber manufacturers are using 1 pound of carbon black to 7 of crude rubber. In tire treads the proportion is nearly 1 of black to 2 of rubber. The consumption of carbon black for 1926 is estimated at 62,500 tons.

Reinforcement of Rubber

How rubber is reinforced is not clear. X-ray analysis offers a new means for research that is now being directed to the study of the molecular structure of rubber with promise of revealing new knowledge. Recently the famous English microscopist Professor J. F. Barnard studied carbon black under a violet ray microscope and by appropriate means arrived at 50 to 60 millimicrons as its particle diameter. In other words a pound of carbon black fully dispersed has an area of 50,000,000 square inches. In a tire compound containing 100 pounds of rubber, and 43 pounds of carbon black, there is developed an interfacial surface of 2 billion square inches. Thus, without any speculations about structure, but viewing the rupture of any substance in terms of the work required to expose two fresh surfaces, we can understand the increased strength of reinforced rubber as due simply to this enormous increase in surface energy. More work is required to expose a fresh surface of rubber plus zinc oxide or carbon black than for rubber alone.

Stiffening of Rubber

The stiffening action of carbon black on rubber is due to its drying it up just as it dries up any liquid or plastic substance. However, the stiffening of rubber may occur in a totally different way, namely: by the shape of a pigment particle as distinguished from its size. This type of stiffening is not really reinforcement since neither the proof resilience nor the tensile strength at rupture are increased. Cotton fiber is a case in point. A typical stress-strain curve for a pure gum mixing containing fiber shows a sudden collapse after a certain elongation and then corresponds essentially to that of pure gum alone. Early in the test each fiber dried up or bound some rubber, but later its stiffening action ceased as it let go under the strain. Powders such as clay, talc and plaster of paris behave in like manner, but owing to their lack of uniformity in crystal length the sharp break disappears from the stress-strain curve.

Additions of a true reinforcing pigment gradually enhance the quality to an optimum beyond which further additions cause a decline to the original condition, and, at last, below it. In the case of carbon black additions, two simultaneous effects take place. First, dilution of the rubber and second, its compensation by increasing the surface energy in the combination. Up to the optimum reinforcement prevails, beyond this dilution prevails. Incomplete wetting, agglomeration or coalescence of the pigment particles hinders the rate of addition of surface energy and limits useful addition of the pigment.

Pigment Dispersion and Piling

Some means of delaying the agglomeration of the reinforcing pigment particles would help conserve crude rubber. In order to bring out the extreme limits of pigment loading as represented by actual contact of the particles the lecturer showed one group of balls arranged in closest contact, or tetrahedral piling, and another group in most open contact or cubical piling. To fill the spaces in cubical piling equal volumes of rubber and carbon black are required. In the case of tetrahedral piling saturation does not occur until 75 per cent by volume has been added. This condition corresponds to 6 pounds of carbon black to 1 pound of rubber or 18 pounds of zinc oxide to 1 pound of rubber. These are theoretical concentrations and much in excess of present practice, but indicate the possibilities to be studied.

The lecturer showed by experiment the difference in volume loading requirements of tetrahedral and cubical piling. The apparatus consisted of a rubber bladder filled with a mixture of sand and water representing, respectively, pigment and rubber. Communicating with the interior of the bladder was a glass tube mounted upon an inclined graduated support to receive an excess of water. In a state of rest the sand assumes tetrahedral piling with the excess liquid standing out near the extremity of the tube. When the bag was pressed or massaged the tetrahedral piling was superseded by cubical piling. This requires a greater volume of liquid to fill the interparticle spaces, as indicated and measured by the liquid retracting into the bladder. This experiment was very striking because unexpected and apparently contradictory. It illustrated most effectively the absorptive capacities of the two types of piling.

As a practical example, if a rubber film is desired equal in thickness to three quarters of the radius of a pigment particle in cubical piling 80 per cent by volume of rubber is needed to 20 per cent by

volume of pigment, whereas, by better dispersion tetrahedral piling 70 volumes of rubber will absorb 30 volumes of pigment. This difference amounts to 12½ per cent saving of rubber.

Piling and Physical Properties

Proper piling results in improved tensile, elongation and lower hysteresis. The best indicator of good dispersion is tensile strength which in some cases may be advanced 25 per cent. Uniformity of tests is another index, although not a quantitative measure of good dispersion.

Good dispersion may be obtained through the use of surface tension reducing substances such as pine tar, having regard to the importance of not lowering the viscosity of the rubber and so inhibiting its dispersing action. The order of addition of softeners, as also that of reclaimed rubber, is important to attain optimum dispersion and piling, and so obtain maximum quality with minimum rubber content.

Softeners and Reclaim

Properly used in conjunction with reinforcing pigments, reasonable amounts of softener and of reclaimed rubber may promote quality, at the same time replacing the equivalent volume of rubber. The blending of first latex rubber with so-called resinous or low grade rubbers may under suitable conditions economize in crude and yet result in excellent quality. Rubber compounding is as yet hopelessly empirical and stands sorely in need of rationalization by the general colloid chemist.

In conclusion, the lecturer emphasized the importance of not regarding the properties of the compound as fixed by its ingredients, but of working out the optimum conditions of milling, order of addition of ingredients, kind, amount and order of addition of softeners and of reclaimed rubber.

The Heat Reactions Occurring During Vulcanization of Rubber[1]

By Alfred A. Perks

The following excerpts are from researches made in the laboratories of the Dunlop Rubber Co., Ltd., Toronto, Canada:

The hot vulcanization of rubber with sulphur, resulting in the combination of varying proportions of the materials, according to the length of time and temperature at which the operation proceeds, has been mainly studied, until recently from the point of view of the physical and chemical properties of the end product; but there appears to be much information, both of interest and value, to be obtained by a consideration of the progressive temperature changes which occur within the material during vulcanization.

The thermal changes during the hot vulcanization of rubber can be roughly divided into two sections, viz., (a) those occurring while the rubber and sulphur each retain their individual existence, and (b) those occurring when the rubber and sulphur are combining with one another.

Since the rate of combination of rubber and sulphur is extremely slow below the melting point of sulphur, i.e., 115 degrees C., except in the presence of a few of the more powerful organic accelerators, it can generally be taken that temperatures lower than this fall into group (a), while those above come under (b). It is clear that the actual rate of rise of the temperature at any point in a mass of rubber and sulphur, with or without other ingredients, will depend upon the rate at which heat can be supplied, the thermal capacity of unit volume of the mix, and the nature of the changes which occur.

Where the process is one of warming up only, the rate of rise of temperature of unit volume of the material at the position under consideration progressively decreases as the temperature there approaches that of the source of heat, being dependent upon (a) the mass of unit volume, i.e., the density of the material, (b) the specific heat of the material, (c) the conductivity of the layers through which the heat has to pass, and (d) the difference of temperature between the heat source and the material.

The observed retardation in the rate of rise of temperature would appear to be mainly due to (a) the known molecular or atomic changes in the sulphur immediately prior to liquefaction, (b) the latent heat of fusion of sulphur, and (c) the possible variable heat of dissolution of sulphur in different rubbers, since with guayule, balata, etc., there is a suggestion that these are affecting the retardation.

Conclusions

Although much further investigation is needed yet the following conclusions can be drawn tentatively:

The combination of rubber and sulphur is accompanied by a slight evolution of heat in the early stages, but an energetic exothermic reaction occurs during the later stages in the vulcanization of a rubber-sulphur of rubber-sulphur-accelerator mix, causing the temperature of the mix to rise above the vulcanizing temperature by as much as 100—150 degrees C. under suitable conditions. This reaction does not commence until about 4—5 parts of sulphur have combined with 100 parts of rubber, and on completion leaves a sulphur product differing radically from the ordinary vulcanizate. The reaction cannot proceed in the absence of uncombined sulphur, but when once started, hydrogen sulphide in considerable quantity is liberated.

For mixings containing 10 per cent or more of sulphur, the temperature inside the mass does not rise steadily to the vulcanizing temperature, but shows an arrest point in the neighborhood of 100 degrees C., due mainly to changes in the sulphur.

An increase in the bath temperature causes an earlier and more vigorous reaction, since the degree of vulcanization which must be attained before the reaction commences is reached more quickly and the speed of the reaction is greater.

Variations in the proportions of rubber and sulphur affect both the time at which the reaction commences and also the energy liberated as heat. For the pale crêpe used, the maximum effect was obtained with the proportions of rubber and sulphur 79 and 21 respectively.

A preliminary cure of the mix leads with small proportions of combined sulphur to progressively earlier and slightly more energetic reactions, as the preliminary cure increases in length. With greater percentages of combined sulphur, the reaction commences at still earlier times, but is not so energetic, since the affinity for sulphur is appreciably less and the amount of available sulphur is also reduced. For prolonged initial cure, the reaction develops slowly and is still less energetic.

The time at which the reaction develops and also its extent are influenced by the origin of the rubber, the reaction developing more quickly in fast-curing rubbers than in slow-curing ones. In several wild rubbers, containing quantities of non-caoutchouc constituents, the reaction is retarded, and balata behaves similarly. Synthetic rubber is slightly reactive.

The removal of the resin delays the start of the reaction, but in some instances ultimately leads to a greater liberation of heat.

In the presence of accelerators the reaction starts earlier and appears to result in the liberation of larger quantities of heat, although in some cases the peak temperature is not so high as with the plain rubber-sulphur mix, on account of the reaction commencing at a lower temperature.

[1] Read at a meeting of the Birmingham Section, of the Society of Chemical Industry, February 23, 1926. *Journal of the Society of Chemical Industry*, May 21, 1926, 142 T-149 T.

Chemical Patents

The United States

1,599,383. RUBBERIZED FIBROUS COMPOSITION. Rubber is precipitated upon a fibrous material from a toluol-alcohol mixture, then drying and removing the toluol by subjecting it to the action of superheated alcohol vapor.—W. G. O'Brien and Paul Becbe, assignors to The Goodyear Tire & Rubber Co., all of Akron, Ohio.

1,600,047. MANUFACTURE OF MOLDED GOODS FROM FIBROUS MATERIALS. Latex of rubber, balata or gutta percha is added, together with a coagulant, to paper making materials while they are in the beating engine. The pulp is rendered free of excessive moisture on a paper machine, is then disintegrated and finally the plastic mass is molded into an article of desired shape.—Frederick Kay, Ashton-on-Musey, England.

1,600,293. METHOD OF WORKING UPON THE SURFACES OF EBONITE ARTICLES. This consists in forcing japan lacquer into the skin portion of the ebonite.—Ryosuke Namiki, Kitatoyshima-Gun, Japan.

1,601,327. COMPOSITE HEEL. A leather substitute tread section is composed as follows: Cotton fiber 70 parts; Pará rubber 15 parts; litharge 5 parts; magnesia 5 parts; gloss black 3 parts; sulphur 2 parts.—Bela W. Rote, Cleveland, Ohio.

1,601,772. RUBBER COMPOUND. A solid, insoluble, spongy, non-adhesive material suitable as an ingredient of rubber mixings consists of a mixture of coagulated latex and coagulated glue.—Robert Russell, Heaton Park, and Herbert Broomfield, Stockport, assignors to Latex Developments, Ltd., London, all in England.

1,602,062. DEVULCANIZING PROCESS. Vulcanized rubber scrap is boiled with an emulsoid colloid solution and a sulphur solvent, which is also a rubber solvent, for a sufficient length of time to devulcanize the rubber. The devulcanized rubber is then dissolved in the solvent employed by continuing the boiling in the same solution.—Cyrus F. Willard, San Diego, California.

1,602,200. NON-HARDENING ADHESIVE FOR PAPERS. The adhesive composition consists of a mixture of 76 parts benzol; 2 parts ether; ½ part solution of ammonia; ½ part acetone in which 21 parts of clean unvulcanized rubber is dissolved.—Paul S. Otto, Waterloo, Iowa.

The Dominion of Canada

263,390. ELECTRO DEPOSITION OF RUBBER UPON METAL WIRE. The wire is passed continuously through an apparatus and receives a coating of vulcanizing rubber by electro deposition. The rubber coating is compacted by rolling pressure and the coated wire passed through an apparatus for vulcanizing.—The Eastman Kodak Co., assignee of S. E. Sheppard and L. W. Eberlin, both of Rochester, New York, U. S. A.

263,898. RUBBER SUBSTITUTE. Vegetable matter is treated in a retort for about 1 hour at about 400 degrees F., with water and an agent that will release the natural gums of the vegetable matter. The treated mass is then removed and molded under pressure to the desired form.—Thomas B. Mohler, San Francisco, California, U. S. A.

264,031. SPONGE RUBBER TUBE. Plasticised crude rubber is mixed with stearic acid, sulphur, litharge, zinc oxide and vaseline, subjected to heat until it attains a porous condition, worked on rolls and finally molded and vulcanized under pressure.—T. P. D. Marshall and Joshua Hirst, assignee of one-half interest, both of Wingham, Ontario.

264,042. VULCANIZATION METHOD. Dipped rubber goods are vulcanized by immersing the rubber coated form in a solution of at least one of the sulphides of phosphorus in a suitable solvent or mixture of solvents.—S. J. Peachey, Hampstead, London, and Allon Skipsey, Woking, Surrey, both in England.

264,816. PROCESS OF MANUFACTURING ARTICLES OF RUBBER. This consists in forming the article of rubber compound including sulphur, curing the article by the application of heat, and after curing applying a solution of sulphur chloride to the surface.—The Gutta Percha & Rubber, Ltd., assignee of John J. Moriarty, both of Toronto, Canada.

264,853. INSULATING AN ELECTRICAL CONDUCTOR. This method consists in vulcanizing the insulating material, rendering it plastic and extruding it about the conductor by application of heat and pressure.—The Western Electric Co., New York, assignee of The International Western Electric Co., New York, both in New York, assignee of Robert R. Williams, Roselle, New Jersey, all in the United States.

264,854. INSULATING MATERIAL. This consists of a layer of rubber and a water resistant material having high dielectric properties. The latter fills only the pores at a comparatively short distance below the outer surface of the rubber.—The Western Electric Co., New York, assignee of The International Western Electric Co., New York, both in New York, assignee of John Johnston, New Haven, Connecticut, all in the United States.

264,862. SEALING COMPOSITION. This comprises latex emulsion qualified by an admixture of bentonite.—Bradley-Dewey, Cambridge, assignee of Ernest C. Crocker, Belmont, both in Massachusetts.

The United Kingdom

253,066. COATED PAPER. Paper sheets or boards are finished by filming the surfaces with rubber associated with sizing and surfacing materials.—G. F. Blombery, Glenwood, Longville Road, Lane Cove, near Sidney, Australia.

253,069. RUBBER COMPOSITION. A dispersion, the particles of which consist of a combination of at least two different substances, is added to latex or other dispersion of rubber. By this means substances may be incorporated which otherwise could not be for various reasons.—Anode Rubber Co., Ltd., 15 Throgmorton avenue, London, assignee of P. Klein and A. Szegvari, Budapest, Hungary.

253,085. ELECTROLYSIS, RUBBER AND CELLULOSE. In the electrolytic deposition of rubber, cellulosic compounds, from an aqueous emulsion on an anode, a reducing agent is introduced which is compatible both with the emulsion and with the material to be deposited in order to prevent or reduce the formation of oxygen in the anode zone.—Kodak, Ltd., Kodak House, Kingsway, London, assignee of S. E. Sheppard and L. W. Eberlin, Kodak Park, Rochester, New York, U. S. A.

253,091. ELECTROLYSIS, RUBBER, CELLULOSE. In the electrolytic deposition of rubber, cellulose or other organic compounds from an emulsion or suspension onto an anode, the latter is made of gas-permeable material so that any oxygen formed in the anode zone can be removed through it.—Kodak, Ltd., Kodak House, Kingsway, London, assignee of S. E. Sheppard and L. W. Eberlin, Kodak Park, Rochester, New York, U. S. A.

253,197. VULCANIZATION ACCELERATORS. Di-xylyl guanidines are used as accelerators for the vulcanization of rubber.—British Dyestuffs Corporation, Ltd., 70 Spring Gardens, C. J. T. Cronshaw and W. J. S. Naunton, Crumpsall Vale Chemical Works, Blackley, both in Manchester.

253,740. RUBBER COMPOSITION. Compositions containing rubber, gutta percha, balata and like latices, soluble silicates and casein are used for insulating materials, resilient materials, adhesives, binders, paints and coatings.—A. Biddle, 1288 East State street, Trenton, New Jersey, U. S.A.

254,004. PLASTIC COMPOSITIONS. A water emulsion of bitumen and rubber. The product may be used for road making, preserving, impregnating or for waterproofing purposes, or be mixed with stone, etc., and the mixture consolidated by pressure.—F. Levy, 38 Parliament street, Westminster.

254,765. RUBBER COMPOSITIONS. A dispersion, the particles of which consist of a combination of at least two different substances, is added to latex or other dispersions of rubber. By this means substances may be incorporated which otherwise could not on account of their specific weight, tendency to flocculate or coagulate the latex, etc.—Anode Rubber Co., Ltd., 15 Throgmorton avenue, London.

255,293. UNITING RUBBER WITH METAL. Rubber and metal are united by applying to the metal a cement consisting of a solution of rubber in benzol or chloroform and charcoal. Then applying the vulcanizable rubber and heating it to a curing temperature. The cement also contains sodium chloride, acting as a flux, and sulphur to vulcanize the rubber in the cement.—R. M. Withycombe, Wyoming, Macquarie street, Sidney, Australia.

256,227. COATING METAL WITH RUBBER. A process of attaching vulcanizable rubber to metal surfaces, such as automobile bodies, cameras, etc., in which the temperature used may vary between 100 and 500 degrees F. No preliminary treatment, such as by sand blast or in an acid bath is necessary for the metallic surfaces to be coated owing to the nature of the compositions used.—R. M. Withycombe, Wyoming, Macquarie street, Sydney, Australia.

France

606,989 (August 5, 1925). Process for producing rubber with a large number of microscopical pores. H. Beckmann.

607,220 (December 1, 1925). Improvements in the process for uniting rubber with metal. R. M. Whitycombe.

607,657 (March 19, 1925). Process and tools for applying dressings and varnishes on all kinds of surfaces. H. Ledeuil.

607,756 (November 13, 1925). Process and apparatus for concentrating rubber latex and similar latices. K. D. P., Ltd.

608,471 (October 8, 1925). Process for coloring rubber. A.-G. Metzeler & Co.

Germany

434,526 (June 8, 1924). Method of producing fine porous rubber sponges. Herbert Lindemann, Dovenfiieth, 20, Hamburg.

Rapid Aging of Latex Paper

By Michael Levin

Soon after Kaye first announced his discovery of the use of latex in paper he created considerable activity on the part of many laboratories to duplicate his results. From actual experiments made in America and Germany it was reported that the rubber in the paper deteriorated very rapidly. It can readily be understood that much importance was attached to these findings.

A few years ago the writer isolated abietic acid from rosin using the method devised by Dr. L. L. Steele of the United States Bureau of Standards. This abietic acid was compounded in rubber, cured, and samples tested for aging, using the Geer oven test. The results indicated clearly that the abietic acid caused the rubber to deteriorate very quickly.

Paper generally contains rosin as a sizing material and this is added to the pulp as a resinate of soda. When latex is added to the pulp there are the three main substances, cellulose fibers, sodium resinate, and rubber.

When the pulp is treated with a coagulating or precipitating agent there are: the cellulose fibers upon which the acid from the rosin is precipitated, and rubber from the latex. The presence of the abietic acid is undoubtedly the cause for rapid oxidation of the rubber as was shown when abietic acid was compounded with rubber.

According to Dr. L. L. Steele (*Journal of the American Chemical Society*, June, 1922), abietic acid shows the presence of two double bonds and appears to require very nearly two molecules of halogen for saturation. Salts of rosin attract oxygen from the air and are added to paints and varnishes causing them to dry faster than ordinarily if the rosin salts were not added. Rosin which has stood in powdered form for considerable lengths of time becomes partially oxidized.

New Machines and Appliances

Flexible Coupling for Rubber Machinery

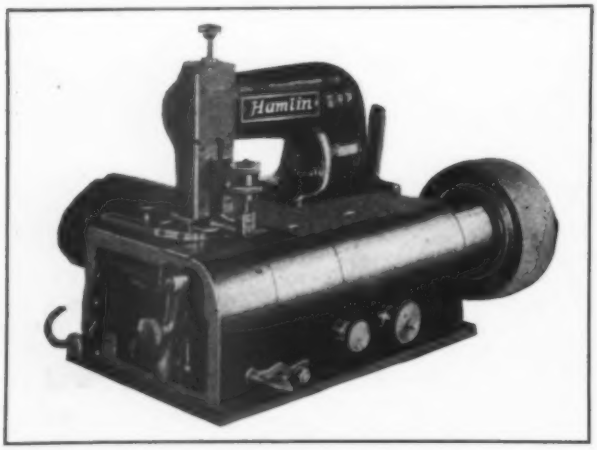
THE flexible coupling here illustrated is characterized by great torsional resiliency which definitely safeguards the driving unit from the destructive vibrations of the driven machine, thus saving stoppages and power and prolonging the life of the machines.

Falk Flexible Coupling

In construction this coupling is simple, consisting of a tempered steel spring in segments, two flanged steel disks with slots into which the spring fits, and a steel shell. The latter protects the coupling parts from dirt, acts as a simple fastener for the spring and as a container for lubricant. Constructed in this manner the coupling will last indefinitely in service. It is made in standard sizes ranging from one-third h.p. to 20,000 h.p. at 100 r. p. m.—Falk Corporation, Milwaukee, Wisconsin.

Rubber Skiving Machine

In the manufacture of tire patches, boots and reliners, much skiving is required. Also in footwear manufacture there is need of counter and rubber skiving. These operations can be done rapidly, efficiently and without difficulty on the special machine here pictured. This is a bench machine of very rugged design, the general appearance of which suggests strength and power to handle the work in a satisfactory manner. It has both top and bottom feed which makes it absolutely positive in carrying through a long skive on heavy rubber and fabric plied stock. The cutting mechanism is completely enclosed and operates a circular steel knife or cutting blade. The length of skive is adjustable within wide limits. The stock being skived is fed independently of the operator who simply guides it under the head as it passes the knife.—Hamlin Machine Co., 91 Willow street, Lynn, Massachusetts.

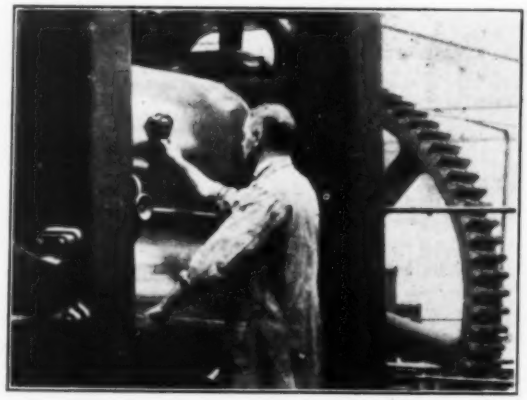


Economy Skiving Machine, Model F

Pyrometer for Surface Temperatures

Skill in judging the heat of calender rolls is difficult to acquire yet is essential to good calender work. The general use of accelerators has added greatly to the calender man's responsibility in this regard. The surface pyrometer here illustrated is a quick and reliable dial reading instrument for indicating the surface temperature of any hot roll. It is thermo-electric, comprising a thermo-couple in the form of a wide strip of copper and constantan having their junction in the center joined across a bow spring and having wire connections to a milli-voltmeter. When the junction is pressed against the surface of a hot roll the temperature is at once indicated on the dial of the instrument. The instrument may be had to range from 0 to 200 degrees C. or from 0 to 400 degrees F.—Cambridge Instrument Co., Inc., Grand Central Terminal, New York, N. Y.

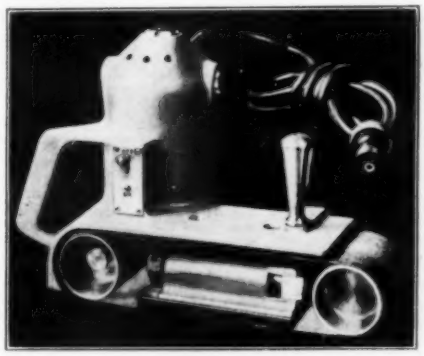
Cambridge Surface Pyrometer



Reading Calender Roll Temperature

Hand Belt Surfacing Machine

Sandpaper is one of the usual tools, if it may be so called, of the mechanical rubber goods man for truing many plane or curved surfaces of articles. The electric tool here illustrated resembles a hand plane surmounted by a small motor which drives a short endless belt surfaced with abrasive. Adjustable pressure is applied on top of the sanding belt as it makes contact with the surface upon which it operates. Not only may flat surfaces be sanded by this machine but concave and convex surfaces as well because the surface of the block over which the belt travels determines what form the belt shall take. For sanding interior curves of diameters larger than 2¼ inches the tool may be tilted or lifted into proper position.

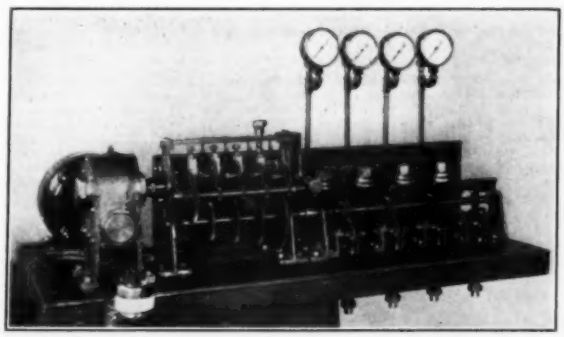


Take-About Hand Sander

The entire machine weighs 12 pounds and except the motor cap is of a one piece aluminum casting. It is equipped with a ⅓ h. p. universal motor. A feature of special importance is the facility to change belts in a fraction of a minute whether for cutting rubber or metal.—The Porter-Cable Machine Co., Syracuse, New York.

Bead Vulcanizing Press Time Control

A most effective and dependable air operated device for controlling the time of vulcanization of molded tire beads is here illustrated. The machine comprises 4 sets of change gears for



"Tic" Air Operated Timer

setting the time intervals. These control the opening and closing of the curing presses electro-magnetically through compressed air system. In operation a single revolution of the timing gears actuates a lever in contact with a push pin that controls the compressed air connection to the press.

With this device there can be no deviation in the curing time. Any failure of the air pressure causes the electrical control to open the presses and stop all heats. The machine is motor operated from a light socket. The apparatus can be extended for 6 presses but that here pictured contains control units for 4 presses. The gages show the steam pressures on each press.—The Thermo Instrument Co., Akron, Ohio.

Improved Rubber Testing and Recording Machine

One of the latest improved testing machines of the pendulum type is that pictured here. It is equipped with a new type gear box, so arranged that when the sample is broken, the lower clamp returns instantaneously to the starting position. This eliminates waiting by the operator and allows many more tests to be made, whether the data points for stress-strain are taken or not. This model is driven by one-sixth horse power. The full capacity of the machine is 150 pounds, with the dial reading by single pound increments.

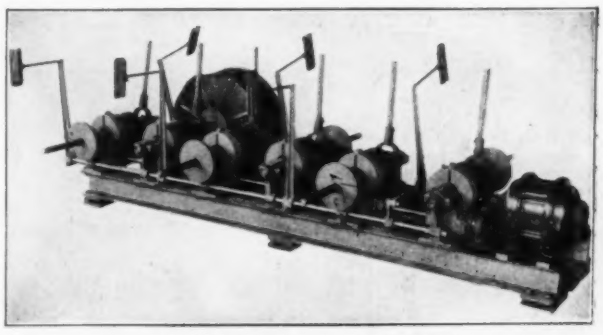
Scott Recording Tester

The recorder used is electrical and has a rectangular chart. The points recorded are burned in a horizontal line, the spark jumping from the pointer on the horizontal rod to the brass platen behind the paper record. On completion of each test, the platen is moved a small distance by turning the hand screw provided for the purpose, so that the next sample burns a separate line of holes. In this way 50 or more tests can be taken on the same sheet of paper, with every test clearly and concisely recorded. This feature is particularly valuable in averaging points over a large number of samples. The plot thus obtained represents the average stress-strain curve of all the samples.—Henry L. Scott Co., Providence, Rhode Island.

Insulated Wire Winding and Reeling Machine

The machine here illustrated is a 24-inch machine for winding the conductors of electric cables through a saturating tank and winding each upon a reel. The machine regularly accommodates 8 reels but can be put up in any multiple of two. Each winding unit is individually mounted and driven through its own clutch making it possible for any unit to be stopped at will.

The winding spindles are parallel to each other, half of them carrying the reels on the right side of the machine and half on the left, in alternate order, thus making a compact and comparatively



Housatonic Winding or Take Off Machine

short machine. Each group or side is driven by a separate shaft longitudinally to the frame of the machine and operates the winding spindles through worm gears. The traverse of the wire across the

reel is provided for by guides carried by arms mounted on rock-shafts so arranged that those traveling outwardly on one side of the machine balance those traveling inwardly on the other side.

The machine is mounted on two longitudinal I-beams full length of the machine. Each unit winding frame as well as the motor drive supports, tie these beams together, making a low, rigid structure.—The Housatonic Machine & Tool Co., Bridgeport, Connecticut.

Airbag Buffing Machine

Prolonging the life of an airbag is an important element in the economy of its use in curing pneumatic tires. Most methods of increasing airbag life require the removal of the oxidized surface preliminary to resurfacing them with new rubber. It is not unusual to double the number of cures per bag by this method. The

Banner Airbag Buffer

saving is greatly enhanced by a quick and easy means of removing the hardened surface of the bag, such as afforded by the machine here pictured.

In operation, the bag is mounted upon an adapter ring and revolved at a slow speed. A rubber plane driven by a large motor is so mounted as to allow the bag to be buffed from the bead to the center of the tread. The bag is then reversed on the adapter for buffing the other side. The success of the buffer is in the sensitiveness of the buffing wheel to the operator's hand. This insures uniform buffing which is not possible when the buffing wheel is not manually controlled.

The rubber plane is a patented buffing wheel in which hardened steel studs are staggered and lapped. This design gives rapid cutting action and will not clog. By reversing the plane on the shaft the cutting pins are maintained sharp. The pins may be replaced when worn down.—The Banner Machine Co., Columbiana, Ohio.

Machinery Patents

The United States

1,599,772. TIRE MOLD. This is designed for shaping and vulcanizing a ventilated puncture proof tire having a fabric-backed rubber tread between which and the tire body are a series of tubular air passages spaced at intervals from side to side of the tread. The mold construction comprises two mold halves with several sets of rings. One pair of rings is positioned on either side of the tread to support the rods which mold the tubular air passages under the tread. A 3-part ring molds the tread, and a pair of clamped rings is supported in a recess on the inner circle of the mold to form the base of the tire beads. The various rings are guided and locked in exact molding position by the closure of the main mold sections.—Frederick A. Kruseman, Akron, assignor to Lambert Tire & Rubber Co., Barberton, both in Ohio.

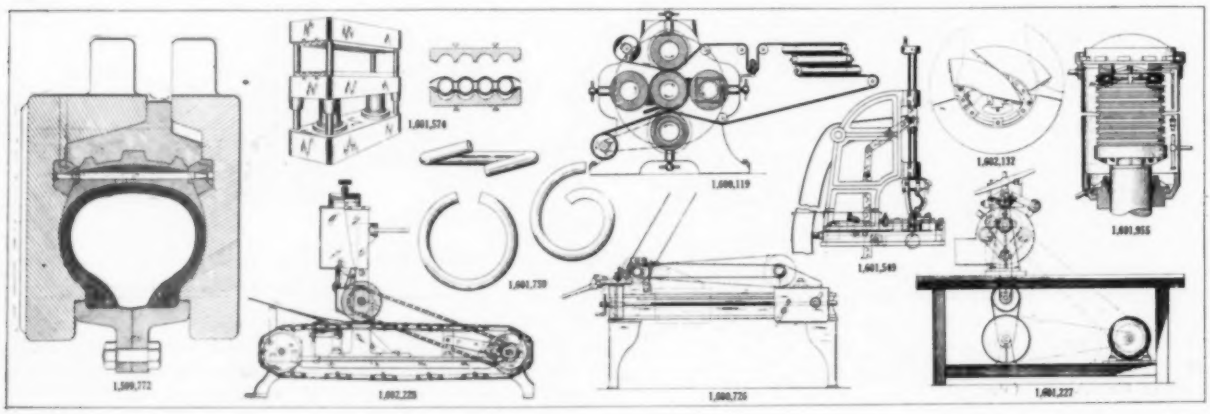
1,600,119. CALENDER FOR FRICTIONING OR COATING FABRICS. Fabric is coated or frictioned on both faces during a single passage through this machine, by a group of five rolls arranged one at each side and one at top and bottom of a central or intermediate roll. The outer rolls are adjustable with respect to the central roll. The rubber is fed on opposite sides of the central roll from above and below forming a layer around it. The fabric to be coated or frictioned is passed between the top and central rolls, receiving gum on one side, thence over a series of idler rollers and a gravity take-up roller, then through a set of fabric turning rollers from which it emerges with its uncoated side uppermost. In this position it passes between the bottom and central rolls and receives a coating of rubber on the second side.—Otto Macklin, assignor to The Miller Rubber Co., both of Akron, Ohio.

1,600,726. MACHINE FOR SLITTING SHEET MATERIALS. An endless rubber or rubberized fabric belt is slit into bands of narrower widths by drawing the work progressively past slitting knives. The band travels over an idler roller at one end of the machine and the cutting roller at the other end upon which the slitting knives act. The idler roller is supported in a sliding support by which the band can be suitably tensioned for cutting. The band is moved against the slitting knives by the power driven roller at the opposite end, passing through side guides to regulate the width of cuts desired.—Walter B. Freeman, Cuyahoga Falls, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,601,227. GRINDER. The opposite ends of pedal rubbers are ground by emery wheels built up of two disks, each of which is removable for replacement with a disk of different shape. The work is supported in geared holders fastened to a rocking shaft, and moved by fluid pressure which holds the piece yieldably against the emery disks. Each holder is provided with a gear which meshes with a gear driven from below for the purpose of rotating the work. The depth of the grinding is determined by a stop which limits the travel of the rocking shaft. The previously ground article is removed from its holder and another blank is inserted in its place, thus maintaining continuous production.—Horace D. Stevens, assignor to The Firestone Tire & Rubber Co., both of Akron, Ohio.

1,601,549. MACHINE FOR ASSEMBLING PARTS OF RUBBER ARTICLES. This machine is designed to unite a valve to an atomizer bulb, a tube or a nipple to a bulb, two bulbs, etc., by providing means for holding one of the parts to be assembled while the other part is supported in alinement with the first part. One of these parts is then automatically stretched prior to telescoping the other part into it. By its exact operation, breakage or damage to goods is entirely avoided.—Charles Wurtenberg, Union City, assignor to L. Candee & Co., New Haven, both in Connecticut.

1,601,754. TUBE VULCANIZING APPARATUS. This consists of a multi-cavity mold for shaping and vulcanizing calender plied rubber around straight poles or mandrels as cores. The upper and lower halves of the mold are in direct engagement at their ends not only to complete the



closure of the mold cavity but also to mutually sustain the parts in proper relation for making the wall thickness of the tube uniform. At either end the mold cavity is made converging to form bevels on the tubes. The mold is adapted to be used in a steam heated vulcanizing press of inner tube pole length.—Donald C. McRoberts, assignor to G. & J. Tire Co., both of Indianapolis, Indiana.

1,601,759. MANDREL FOR TIRE TUBES. This mandrel is circular or spiral in form of circular cross section having a reentrant curve or dimple along the inner curvature of the mandrel. The use of this dimple is to accentuate the curvature at the interior of the tube making it ovate when reversed after curing. These mandrels are made of metal and so shaped that the tubes produced on them present a smooth exterior combined with the ovate cross section desired. They may be made in various curvatures such as a circular or spiral as desired.—Clyde E. Lowe, East Cleveland, Ohio.

1,601,955. METHOD AND APPARATUS FOR VULCANIZING TIRES. Tires are quickly heated from the interior as well as through the molds thereby insuring quick and uniform vulcanization, the heat-retarding effect of the air in the air bag or core being quickly eliminated by its thorough expulsion. Oxidation of the interior surface of the core is avoided and quick equalization of temperature throughout the interior of the core is effected.—John R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,602,132. COLLAPSIBLE CORE AND CHUCK. A device in which one of the segments of the core may be drawn radially inward and entirely removed from connection with the other members to permit a compact collapse of the remaining sections, and facilitate removal of the cured tire. When the radially moveable segment has come inwardly far enough to disengage the locking mechanism and clear the inner edge of the tire it is removed bodily from the remainder of the core. Following its removal the hinged segments are turned inward and so reduce the outer circumference of the core, that the tire can be readily removed.—Peter D. Thropp and Lester A. Moreland, assignors to The DeLaski & Thropp Circular Woven Tire Co., all of Trenton, New Jersey.

1,602,228. CEMENTING MACHINE. This is adapted for cementing inner soles for shoe work. From a reservoir located above the machine rubber cement flows down to a space, one side of which is formed by the cement applying roller. A scraping knife applied against this roller regulates the amount of cement it transfers to the inner soles or other material passing under it on a fine surface built as a jointed endless apron or conveyer.—Thomas B. Huestis, assignor to National India Rubber Co., both of Bristol, Rhode Island.

1,599,534 Method of producing retreading matrices.

1,599,771 Apparatus for making cushion tires. Fred R. Klaus, Warren, Ohio.

1,600,240 Strip feeding device. Robert McClenathen, Frostburg, assignor to The Kelly-Springfield Tire Co., Cumberland, both in Maryland.

1,600,412 Calender guide roller. Daniel E. Hennessey, Milwaukee, Wisconsin, assignor to The Fisk Rubber Co., Chicopee Falls, Massachusetts.

1,600,434 Device for stringing articles. Edwin L. Stringer, Cudahy, Wisconsin, assignor by mesne assignments to The Fisk Rubber Co., Chicopee Falls, Massachusetts.

1,600,498 Wrapping machine. William M. Wheildon, Ashland, Massachusetts, assignor by mesne assignments to Pierce Wrapping Machine Co., Chicago, Illinois.

1,600,586 Tire mold. Schuyler C. Hatfield, Baltimore, Maryland.

1,600,694 Tire construction machine. Ralph Rogers Mundell, Chicago, Illinois.

1,600,697 Method and apparatus for manipulating plastic material. John E. Noonan, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

1,600,914 Tire cover mold. Giuseppe Venosta, Milan, Italy.

1,601,240 Gum strip rack and applicator. John W. Dirkson, Kent, and Lee E. Clough, Akron, assignors to The Mason Tire & Rubber Co., Kent, all in Ohio.

1,601,716 Vulcanizing press. George W. Bulley, assignor to The Miller Rubber Co., both of Akron, Ohio.

1,601,999 Tread cutting machine for tire molds. Julien F. Cullen, Portland, Oregon.

The United Kingdom

255,016* Device for cutting rubber sheets. T. J. Mell, 327 Storer avenue, Akron, Ohio, U. S. A.

255,017 Device for coloring rubber. B. F. Goodrich Co., 1780 Broadway, New York, N. Y., assignee of T. J. Mell, 327 Storer avenue, Akron, Ohio, both in U. S. A.

255,495* Apparatus for feeding articles from hoppers and shoots. Dryden Rubber Co., 1014 South Kildare avenue, Chicago, Illinois, assignee of J. H. Kintzele, 407 South Broadway, St. Louis, Missouri, both in U. S. A.

255,567 Plastic material molds. A. E. White, 88, Chancery Lane, London (B. F. Goodrich Co., 1780 Broadway, New York, N. Y., U. S. A.).

256,337 Machine for covering elastic cores. W. Matterson, Bridge Road, Coalville, Leicestershire.

*Not yet accepted.

New Zealand

56,052 Tire press. Dunlop Rubber Co. of Australasia, Ltd., 108 Flinders street, Melbourne, Victoria, Australia, assignee of Georges Albert Mortier, Fort Dunlop, Erdington, Birmingham, England.

56,795 Mandrel. Dunlop Rubber Co. of Australasia, Ltd., 108 Flinders street, Melbourne, Victoria, Australia, assignee of John Dalglish, Fort Dunlop, Erdington, Birmingham, England.

The Dominion of Canada

264,523 Apparatus for making rubber articles. The United Shoe Machinery Co. of Canada, Ltd., Montreal, Quebec, assignee of George Lawrence Bean, Quincy, Massachusetts, U. S. A.

France

606,933 (March 6, 1925). Machine for threading rubber washers on wires, or similar applications. E. Gargiulo.

607,833 (December 10, 1925). Improvements in machines for covering rubber thread. Etablissements Pourtier Frères.

608,765 (December 29, 1925). Improvements in machines for cutting ribbons of bias or straight fabric of leather, rubber and the like. S. A. Brandon.

608,962 (January 5, 1926). Improvements in the pedestal and similar supports for rollers of machines for grinding, mixing, washing, calendering rubber, or of other machines. A. Fraser, Rissik Fraser and Co., Ltd., Francis Shaw & Co.

609,354 (January 14, 1926). Improvements in molds for the manufacture of rubber tires. J. A. Audy.

Germany

434,876 (June 28, 1922). Apparatus for producing rolled edges on hollow rubber dipped goods, particularly rubber nipples. Hermann Menchen, Planegg b. Munich; Emilie Menchen, Munich; Dagobert Menchen, Muhlenbeck b. Berlin; Oscar Menchen, Buenos Aires, Argentina; Richard Menchen, Porto Alegre, Brazil, and Pauline Petersen, née Menchen, Aalborg, Denmark. Represented by Hermann Menchen, Bahnhofstrasse 47, Planegg b. Munich.

Designs

Germany

957,085 (June 9, 1926). Vulcanizing apparatus for rubber tires with steam box. Wilhelm v. d. Heyde, Stade, i. Hannover.

957,316 (June 30, 1926). Self-regulating device for mounting rubber thread. Käseberg & Co., Barmen-Nächstebreck.

958,745 (May 14, 1926). Device for preventing the shifting of rubber tires on the felly. Kronprinz A.-G. für Metallindustrie, Ohligs (Rheinland).

959,665 (February 3, 1926). Mold for vulcanizing vehicle tires. Dunlop Rubber Co., Ltd., London. Represented by Dr. R. Wirth, C. Weihe, Dr. H. Weil, M. M. Wirth, Frankfurt a. M., and T. R. Koehnhorn and E. Nöll, Berlin, S. W. 11.

Process Patents

The United States

1,600,693 Method of curing molded rubber articles. Henry R. Minor, Ossining, assignor to General Carbonic Co., New York, both in New York.

1,601,092 Hose. Daniel Michel Weigel, Trenton, New Jersey.

1,601,672 Process of forming shoe upper seam. Edgar S. Bott and Arthur S. Funk, assignors to La Crosse Rubber Mills Co., all of La Crosse, Wisconsin.

The Dominion of Canada

264,658 Rubber sole. The Alfred Hale Rubber Co., Atlantic, assignee of David A. Cutler, Wollaston (Quincy), both in Massachusetts, U. S. A.

The United Kingdom

254,940 Connecting uppers to insoles, etc. A. and W. B. Looms, Bath Street Works, Market Harborough, Leicestershire.

255,133 Wood substitute. W. M. C. Baber, 3, Buckingham Place, Brighton, Sussex, and F. H. Ayres, Ltd., 111, Aldersgate street, London.

255,597 Forming mud guards. A. H. Lass, 48, Old Park Road, Palmers Green, London, and G. H. Sandwell, Widcombe, Oakdale Road, Weybridge, Surrey.

255,814* Elastic fabrics. O. & C. Ansonia Co., assignee of G. E. Clauss, both of 153 Main street, Ansonia, Connecticut, U. S. A.

256,290 Tire jacket and cover. F. F. Kerr, Staplands Hall, Broad Green, Liverpool.

256,301 Connecting uppers to insoles and soles, etc. J. J. Daly, 215 Essex street, Boston, Massachusetts, U. S. A.

*Not yet accepted.

France

606,905 (March 3, 1925). Process and equipment for cutting elastic substances, like rubber, into sheets. E. Gargiulo.

609,864 (January 22, 1926). Process and apparatus for preparing rubberized fabrics. Dunlop Rubber Co., Ltd.

ENRIQUE MOLINA, INVENTOR OF THE RUBBER COAGULATING APparatus covered by United States patent No. 914,156, calls attention to the mis-spelling of his name on page 160 of *The Rubber Country of the Amazon*, published by The India Rubber Publishing Co., in 1911.

Abstracts of Recent Rubber Articles

THERMODYNAMICS OF ELASTICITY AND THE SHELL THEORY OF CAOUTCHOUC. Consideration of a theoretical structure.—Heinrich Feuchter, *Kautschuk*, August, 1926, 171-9. September, 1926, 197-204. Graphs. German. Serial.

APPLICATION OF PHYSICS AND PHYSICAL CHEMISTRY IN RUBBER TECHNOLOGY AND RESEARCH.—Lothar Hock, *Kautschuk*, August, 1926, 181. German.

FORMULA OF CAOUTCHOUC AND CAOUTCHOUC OZONIDE.—Fritz Evers, *Kautschuk*, September, 1926, 204-206. German.

VARIATIONS OF PLASTICITY, NERVE AND VULCANIZATION ABILITY IN RAW RUBBER.—W. Greinert and J. Behre, *Kautschuk*, September, 1926, 207-209. German.

ON THE STRENGTH OF HARD RUBBER.—H. Brandt, *Kautschuk*, September, 1926, 213-214. Tables. Graphs. German.

ELECTRICAL MEASUREMENT OF VULCANIZER TEMPERATURES.—Walter Jaekel, *Kautschuk*, September, 1926, 214-216. Illustrations. Graphs. German.

SIFTING PLANT. Descriptive of apparatus for screening and air separating ground materials.—Alexander Ogilvie, *Chemistry and Industry*, October 1 and 8, 1926, 713-718, 735-736. Illustrated.

MECHANICAL TECHNOLOGY OF EBONITE. Methods of protecting centrifugal baskets and other large hollow vessels with hard rubber.—Anonymous, *India Rubber Journal*, September 11, 1926, 424-6; September 18, 458-9; October 2, 1926, 531-532.

FURTHER CONTRIBUTIONS TO THE THEORY OF THE NEEDLE FORMATION OF THE CAOUTCHOUC MOLECULE.—E. Lindmayer, *Gummi-Zeitung*, September 17, 1926, 2805-7. German.

MACHINES FOR COATING OR RUBBERIZING TEXTILES.—Anonymous, *Gummi-Zeitung*, October 1, 1926, 24-27. Diagrams.

RUBBER A FIBROUS MATERIAL. Unvulcanized rubber which has been severely stretched and then frozen in ice water resembles wool or viscose in its behavior when further stretched. More intense freezing in liquid air gives a product of greater strength. Both the crystalline portion of stretched rubber and the amorphous constituent are very sensitive to change of temperature.—F. Kirchhof, *Kautschuk*, 1926, 151-156.

THERMODYNAMICS OF THE JOULE EFFECT IN RAW RUBBER.—L. Hock and S. Boestroem, *Kautschuk*, 1926, 130-136.

PREVENTION OF LEAD POISONING IN INDUSTRY—I. RUBBER INDUSTRY. The method adopted, by which the manufacturer supplies to the rubber goods factories a mixture of 80 parts of the lead compounds with 20 parts of rubber or wax in the form of thin sheets has proved very successful in preventing poisoning.—C. A. Klein, *Journal of Industrial Hygiene*, 1926, 8, 295-299.

STRUCTURE OF STRETCHED RUBBER.—E. A. Hauser and H. Mark, *Kolloid Chemische Beihefte*, 1926, 22, 63-94.

THE RESINS OF HEVEA RUBBER.—G. S. Whitby, Jacob Dolid and F. H. Yorston, *Journal of the Chemical Society*, 1926, 1448-57.

VULCANIZATION IN VARIOUS GASES.—N. Pavlenko and V. Tetivkin, *Journal of Chemical Industry* (Russian), 2, 458-65.

EXPERIMENT TO SHOW THAT THE SUB-PERMANENT SET OF VULCANIZED RUBBER DECREASES WITH INCREASE IN THE TIME OF VULCANIZATION.—Takeji Yamasaki, *Journal Society Chemical Industry* (Japan), 29, 127-32 (1926).

MECHANISM OF THE ACTION OF CERTAIN ACCELERATORS IN THE VULCANIZATION OF RUBBER. A review of the theory of Bruni and Romani.—*Revue Général Mathematique Plastiques*, 2, 232-5 (1926).

ENAMELING RUBBER GOODS. The use of metallic soaps and colored rubber solutions is described.—E. Bruce Warren, *Rubber Age*, London, October, 1926, 316-317.

ELASTIC THREAD. Discussion of problems and results when using rubber thread in woven elastic webs, and braided rubber cords with special reference to shock absorbers for air craft.—L. Rowland, *Rubber Age*, London, October, 1926, 328-329.

RUBBER FORMULA AND RUBBER OZONIDE.—Dr. Fritz Evers, *Kautschuk*, September, 1926, 204-206. Formulas. Table.

RUBBER SOFTENERS. Descriptive classification of the more usual softeners and the common relationship existing between them.—W. N. Burbridge, *Rubber Age*, London, October, 1926, 333-337.

EFFECT OF CALCIUM CARBONATE, POTTERS' WHITE CLAY AND BARIUM SULPHATE ON THE PHYSICAL PROPERTIES OF VULCANIZED RUBBER. Comparative experiments.—Y. Fukui, *Osaka Industrial Research Laboratory*, Volume 6, 1-21.

RUBBER TAPPING SYSTEMS IN SUMATRA. A report on the tapping systems of North Sumatra issued as a communication of the General Experimental Station of A. V. R. O. S. (Rubber Series No. 51).—J. G. J. Maas, *India Rubber Journal*, October 9, 1926, 579-581.

A LABORATORY LATEX. A latex which gives practically all of the reactions of rubber latex can be prepared by emulsifying 1 part camphor, 4 parts water, 0.02 part sodium oleate and 1.5 parts acetaldehyde. Any emulsifying agent other than sodium oleate may be used, provided that it does not reverse the emulsion.—Hsi-Ching, *Journal Physical Chemistry*, 30, 713-5 (1926).

DUSTING OF RUBBER PRODUCTS BASED ON MODERN PRINCIPLES. Colloidal dusting agents are to be preferred to the present kinds, both because of their finer state of division and because of their nearer approach to transparency.—Rudolf Ditmar, *Zeitschrift Angen Chemie*, 39, 826-7 (1926).

RUBBER OVERCOMES ABRASION IN MANY TYPES OF EQUIPMENT. Anonymous. *Chemical and Metallurgical Engineering*, October, 1926, 638-639.

RUBBER AS A MATERIAL IN THE CHEMICAL PLANT. Bonding rubber to metal.—Anonymous. *Chemical and Metallurgical Engineering*, October, 1926, 626-627.

OBSERVATIONS CONCERNING RAINCOATS AND RUBBER. Gumming solutions.—Dr. Werner Esch, *Gummi-Zeitung*, Berlin, September 3, 2697-2699.

QUALITATIVE AND QUANTITATIVE ANALYSIS OF THE MINERAL CONSTITUENTS OF MANUFACTURED RUBBER. I. Abstracted from "Methods of Testing Rubber," published by the German Association for Testing Technical Materials.—*Le Caoutchouc et La Gutta-Percha*, September 15, 1926, 13259-13260.

ON THE RÖNTGEN EFFECT OF STRETCHED GELS, PARTICULARLY OF RUBBER.—Wolfgang Ostwald, *Kolloid-Zeitschrift*, September 1, 1926, 58-73. Diagrams.

VARIATIONS IN PLASTICITY, NERVE AND RATE OF VULCANIZATION IN CRUDE RUBBER.—Dr. W. Greinert and Dr. J. Behre, *Kautschuk*, September, 1926, 207-209. Tables.

ON THE RESISTANCE TO FLEXURE OF HARD RUBBER.—H. Brandt, *Kautschuk*, September, 1926, 213-214. Tables.

TAPPING SYSTEMS IN NORTH SUMATRA.—Dr. J. G. J. A. Maas, *Archief voor de Rubber Cultuur*, September, 1926, 414-433. Tables. English version, 434-442.

RESULTS OF THE INQUIRY INTO METHODS OF PREPARATION IN BESOEKI IN 1925.—L. R. von Dillen, *Archief voor de Rubber Cultuur*, September, 1926, 443-469. Tables. English version, 470-474.

SOME REMARKS ON THE STORING AND PACKING OF BUD WOOD.—Dr. J. G. J. A. Maas, *Archief voor de Rubber Cultuur*, September, 1926, 475-481. Tables. English version, 482-486.

THREE SHORT PAPERS ON *Hevea Brasiliensis*.—Dr. C. Heusser, *Archief voor de Rubber Cultuur*, August, 1926, 355-363. Illustrations. English version, 366-368.

THE COBWEB MOULDS OF *Hevea Brasiliensis*.—Dr. K. B. Boedijn, *Archief voor de Rubber Cultuur*, August, 1926, 369-373. Illustrated. English, 374-376.

PREPARATION INQUIRY IN WEST AND CENTRAL JAVA AND THE LAMPONGS IN 1925-26.—Dr. R. Riebl, *Archief voor de Rubber Cultuur*, August, 1926, 377-409. Numerous Tables.

GUMMING AGENTS COMPOUNDED ACCORDING TO GERMAN PATENTS OF RECENT YEARS. I.—Dr. Leit, *Kunststoffe*, October, 1926, 189-193.

The Editor's Book Table

Book Reviews

"A. S. T. M. STANDARDS ADOPTED IN 1926." Paper, 102 pages, 6 by 9 inches. American Society for Testing Materials, 1315 Spruce street, Philadelphia, Pennsylvania.

THIS pamphlet forms the second supplement to the 1924 issue of the biennial book of standards. It contains 16 standards adopted by letter ballot of the Society on September 1, 1926, and replacements of 7 standards appearing in the Book of Standards. While most of the specifications are of engineering rather than chemical interest there are several methods of test of miscellaneous materials that have interest for rubber chemists. These are: Test for Coarse Particles in Paint Pigments; Test for Viscosity of Petroleum Products and Lubricants; Test for Softening Point of Bituminous Materials (Ring and Ball Method), also the Standard Specifications for Sieves for Testing Purposes.

"THE PHILIPPINE AGRICULTURAL REVIEW." Rubber Number Published by the Manila Bureau of Printing, Manila. Paper, 83 pages, illustrated, 7 by 10 inches.

A comprehensive summary of Philippine rubber cultivation appears in this special issue of The Philippine Agricultural Review, where four contributors report the results of their researches and practical rubber experience. Their papers include the following: "A Report on the Rubber Industry in Mindanao," by Francisco G. Galang; "Pará Rubber," by Jose S. Camus; "Rubber Tree Diseases and Their Control," by N. G. Teodoro; and "Methods of Increasing Yields on Rubber Plantations," by A. H. Muzzall. Mr. Muzzall was one of the authors of the report on "Possibilities for Pará Rubber Planting in the Philippine Islands," which was published by the Department of Commerce.

Some of the conclusions reached in these four papers are as follows: Mindanao has about 305,000 Pará rubber trees growing in the provinces of Cotobato, Davao, and Zamboanga, and about 35,000 Castilla trees in Davao, the total planted area being 1,135 hectares. Labor conditions are generally unsatisfactory, and there is a labor shortage on all the plantations. Climatic conditions in Davao, Cotobato and on Basilan Island are very favorable to growing Pará rubber trees. No serious diseases have been observed on Pará trees in Mindanao. No artificial irrigation or drainage is necessary.

About one-third of the world's rubber is now produced by small farmers, and in the Philippines it would seem advisable for small producers to plant rubber under a community system; that is, each to cultivate as great an area as he deems expedient and the community to put up the coagulating plant. Budding seems to be the most promising method for developing high yielding strains of rubber trees.

"AMBRONN-FESTSCHRIFT DER KOLLOID CHEMISCHEN BEIHEFTE." With collaboration of friends, admirers and pupils. Edited by A. Frey and Wo. Ostwald. Published by Theodor Steinkopff, Dresden, 1926. Heavy paper, illustrated, 382 pages, 6¼ by 9¼ inches.

To celebrate the occasion of his seventieth birthday, a number of friends, admirers and pupils of Hermann Ambronn have collaborated to produce this volume which is partly devoted to a recapitulation and appreciation of the eminent scientist's work and partly to articles on a variety of subjects pertaining to colloid chemistry.

Ambronn is the type of a true scientist with whom science occupied first place always. About 20 years ago he gave up a lucrative position to devote himself more completely to his scientific investigations, particularly in connection with the micellar structure theory. He spent 30 years of labor in endeavoring to establish this neglected theory and it was not until 1918 when the X-rays so brilliantly confirmed his views that he received the recognition due him.

Among the many papers gathered together in this volume bearing directly on rubber problems may be mentioned: "Contributions to the Structure of Distended Rubber Test Pieces," by E. A. Hauser and H. Mark, and "Has the Synthesis of Rubber Succeeded Yet?" by J. R. Katz.

"RUBBER AND FOOTWEAR." The Rubber Growers' Association, Inc., 2, 3 and 4 Idol Lane, Eastcheap, London, E. C. 3, 1926. Paper, 5½ by 8½ inches, 39 pages. Illustrated.

This is an interesting popular description of the origin and preparation of crude rubber, followed by the general methods of rubber goods manufacture, particularly as conducted in the footwear division of the industry. The development and construction of rubber boots and shoes is very interestingly told. The concluding chapters, dealing with crêpe soles, fibrous crêpe soles and rubber adhesives, contain important practical information of manufacturing interest. Equally valuable to the wearer is the brief section devoted to the relation of rubber foot wear to hygiene.

New Trade Publications

"GRASSELERATOR, VULCANIZATION ACCELERATOR 808." Published by the Grasselli Chemical Co., Rubber Service Department, 347 Madison avenue, New York, N. Y., for distribution to rubber chemists and compounders. This booklet of valuable information and data, with graphs, depicts the effect of accelerator 808 under varying temperatures of cure and compounding conditions. Its use with stocks containing large percentages of reclaim is illustrated by practical formula.

"THE RUBBER EXCHANGE OF NEW YORK, INC., FIRST ANNUAL Report," 1926. By Francis R. Henderson, president. This interesting report covers the operations of the Rubber Exchange for practically the first eight months since its opening February 15, 1926. Brief reviews are given of the important factors which influence the supply and demand of crude rubber such as restriction by The Stevenson Act, the growth of the automobile industry and tire production which absorbs 80 per cent of the world's crude rubber production. The data reported of the operations on the Exchange show that 37,401 contracts, equivalent to 93,502½ tons covering all positions were traded in and the value of the Exchange to the industry clearly demonstrated.

The president's report is followed by that of the treasurer whose balance sheet shows a highly satisfactory financial condition.

"SPECIAL MACHINES FOR TYRES AND TUBES." FRANCIS SHAW & Co., Ltd., Bradford, Manchester, England. The machines listed include only those of most modern type from the internal mixer to the vulcanizing mold. It is natural that many of the machines are of American design which is another way of expressing their adaptability and efficiency in production. A section of the catalog is devoted to the special machinery employed in the widely used Hele-Shaw process of bicycle tire manufacture.

"THE SIMPLEX MANUAL," ISSUED BY SIMPLEX WIRE & CABLE Co., 201 Devonshire Street, Boston, Massachusetts, contains, in addition to information regarding Simplex products, tables and data for the ready reference of electrical engineers.

"LO-HED," A NEW CATALOG ISSUED BY THE AMERICAN Engineering Co., Philadelphia, Pennsylvania, illustrates and describes an electric hoist that operates in the minimum head room. This is built in four types to meet every need and under a variety of controls and is recommended for use in rubber plants for both indoor and outdoor purposes.

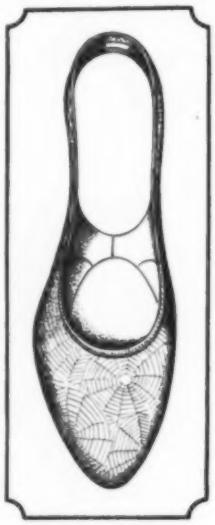
New Goods and Specialties

Variegated Rubbers to Match Shoes

WHATEVER the mode in women's shoes, it may be matched by light weight rubbers which do not detract from the elegant appearance of the footwear, but blend perfectly with the most delicate shades of shoes and stockings.

A new idea in these rubbers is the So-Lite, illustrated here, which is made in a variety of colors to match the most fashionable designs, so that there may be one for each pair of shoes, thus avoiding a clashing in the color scheme of the ensemble. Each pair is packed in a plaid waterproof pouch which can be easily slipped into a handbag and carried when the weather is cloudy and threatening, making these smart, colorful overshoes accessible in case of need.

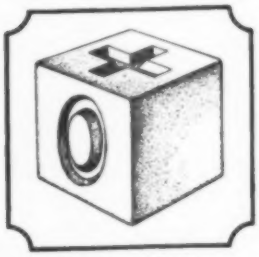
The manufacturer of the So-Lite rubber is the United States Rubber Co., 1790 Broadway, New York, N. Y., who have only recently added this to their line of overshoes.



So-Lite Rubbers

Toy Building Block

Little hands frequently are responsible for a good deal of destruction and noise so parents of small children will welcome this new building block as it is made entirely of sponge rubber. The Noysless block cannot mar furniture and will not make a racket no matter how roughly it may be treated or thrown about. It has an educational value also, as the letters of the alphabet are cut on two sides, the remaining sides bearing fanciful designs such as a maltese cross, etc. It cannot harm the child if placed in the mouth, and is sanitary because it may be washed frequently. —The Oak Hill Rubber Co., Oak Hill, Ohio.



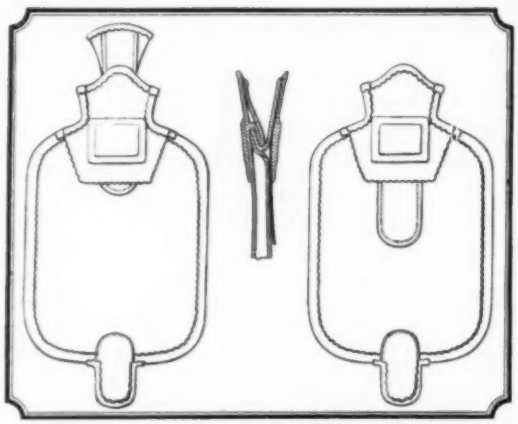
Noysless Block

Rubber Non-Skid Chain

Something new in car and tire protection has been put on the market by the Goodyear Tire & Rubber Co. of Canada, Ltd., New Toronto, Canada, a rubber non-skid chain, which has been specially designed and constructed to meet Canadian driving conditions. Five distinct features stand out, such as quiet running, longer wear, tire saving, easy application and safety. The makers claim these chains are noiseless in operation, eliminating clanging or banging on the fenders and that they will outwear several sets of steel chains; that they can be left on wheels indefinitely without injury to the tire; that the broad rubber cross links protect tread and sidewalls, and that they can be put on or taken off quickly. Briefly, they are built on the same principle as Goodyear All-Weather tread, scientifically designed to resist skidding in any direction.

Novel Fastening for Hot Water Bottle

The hot water bottle shown in the illustration, of which M. B. Reach is the patentee, has as an outstanding feature a new type of fastening which employs only rubber in its construction. In order to close the bag after it is filled, a tab at the top is pulled down which serves to double the neck upon itself and holds it in folded condition preventing any leakage of the water; to open, it is only necessary to pull the neck up when the contents may readily be emptied.—J. R. Gammeter, 680 North Portage Path, Akron, Ohio.



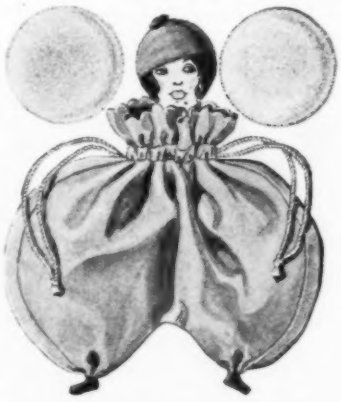
Turtle Neck Bottle

Rubber Jumper for Golfers

The newest women's golfing suits have, in addition to the woolen jumper and skirt, a rubber jumper which is designed for play in wet weather.

Powder Puff Pocket

A novel bag for carrying powder puffs has been devised by the I. B. Kleinert Co., 485 Fifth Avenue, New York, N. Y. This bag is made of pure gum rubber, in a varied assortment of colors, and is fashioned in the shape of a doll with a puff in each leg, one for powder and one for rouge. A dainty little head is attached to the top of the bag, and when the puffs are in place and the draw strings tightened, the bag is converted into an attractive doll which fits easily into the purse.



Rouge and Powder Puff Doll

Walter Hagen Golf Ball

Claims made for this ball are that the core is absolutely centered and the ball perfectly round. It has been carefully and scientifically made.—Walter Hagen Golf Products, Inc., Longwood, Florida.

Boxer's Head Protector

Thoroughly practical in every way, this protector was designed in accordance with suggestions made by some of the leading boxers and trainers. It is made of soft leather which is well padded over the forehead and cheeks, a further protection being afforded by ear cushions of leather covered sponge rubber. An elastic web head band holds it securely in place and it is fastened by means of flexible leather straps.—A. J. Reach Co., Tulip and Palmer streets, Philadelphia, Pennsylvania.

LP Head Guard

Hard Rubber Tank Float

Corroded, leaky tank floats causing endless trouble and annoyance may be avoided by installing Enduro hard rubber floats, which, so the manufacturers claim, last much longer and carry a five-year guarantee.—Woodward-Wagner Co., Philadelphia, Pennsylvania.

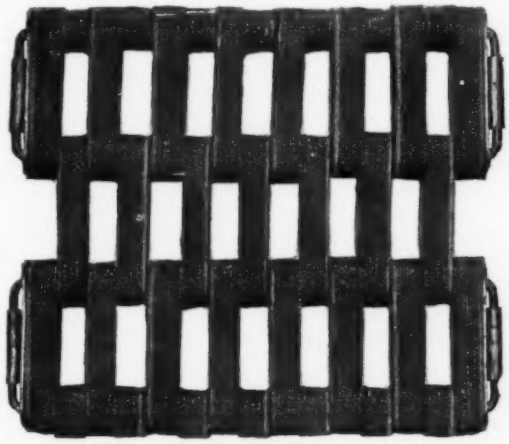
Deauville's Newest Footwear

New styles and combinations of colors are shown in the new Deauvilles which the Jefferson Import Co., Inc., 47 West 34th street, New York, N. Y., is introducing to America. The shoes are made with high and low heels, in leather with crêpe rubber soles.

Non-Skid Mat

Insurance against damage suits resulting from persons slipping on tile, stone, or such hard surfaces in public buildings, is one of the advantages claimed for the Durable non-skid mat, manufactured by the Durable Mat Co., Inc., 2926 Sixteenth avenue, S. W., Seattle, Washington.

The mats are made from links or blocks punched from the sidewalls of selected used cord tires, the beads first removed from the tire, the carcass punched into blocks approximately 2½ by 9/16 inches, these blocks then woven on a special spring steel galvanized wire. The mat rolls up easily and may be cleaned by simply turning the hose on it and washing it with soap and water.

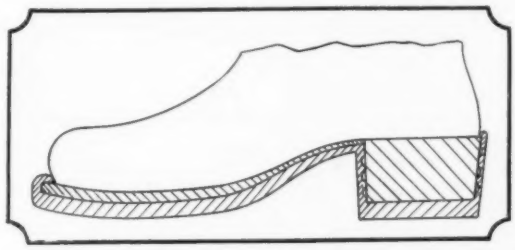


Durable Rubber Mat

Dish breakage in restaurants is reduced to a minimum by the use of these mats, and they are equally indispensable in hospitals, gymnasiums, steamships, etc., as well as in the private kitchen.

Removable Rubber Shoe Sole

A detachable rubber sole and heel covering the entire bottom of a shoe is represented in section in the accompanying figure. It conforms to the general contour of the sole and provides a cavity to



Detachable Rubber Sole

receive the heel of the leather shoe. The article has an elastic top edge formed inwardly to grip the shoe sole and hold the rubber in place.—Solomon Schüreck, Steinstrasse 59, Dusseldorf A. Rhein, Germany.

Underwood & Underwood

A NEW FASHION IN BATHING COSTUMES, DESIGNED FOR THE FLORIDA SEASON, IS A RUBBERIZED SATIN ENSEMBLE KNOWN AS THE LADY EDISON. THE CAPE OF THIS CHIC OUTFIT IS EMBROIDERED IN FLAMBOYANT FLORAL DESIGNS AND EDGED WITH FRINGE. THE BATHER MAY REST BETWEEN DIPS WITHOUT ANNOYANCE FROM THE SUN'S GLARE ON THE SAND, AS THE DETACHABLE FLANGE ON THE HAT AFFORDS AMPLE PROTECTION TO THE EYES.

German Rubber Doll

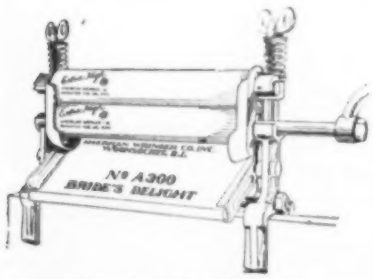
Such a pretty little miss as Olga will undoubtedly find her way to the bureau of the grown-up as well as the carriage or play room of the smaller tots. Her costume is the newest thing in winter apparel, her coat with large white fox collar and hands in the pockets above which are the white fur trimmed cuffs, and she is all rubber from her saucy close fitting turban, with its dagger pin, to the long Russian boots at the top of which her flesh colored knees appear. The doll is hand made, the face and costume painted with non-poisonous colors.

These dolls are one of the many rubber novelties manufactured by Hannoversche Gummiwerke "Excelsior," Aktien-Gesellschaft, Hannover-Limmer, Germany, whose American representative, for these articles, is George Borgfeldt & Co., 16th street and Irving Place, New York, N. Y.

Baby Olga

New Clothes Wringer

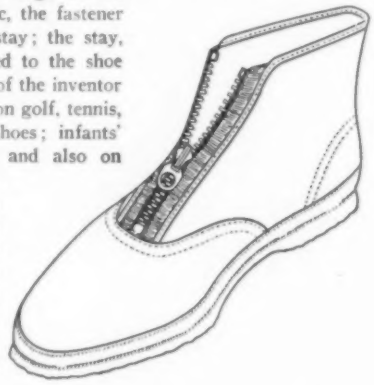
To meet a long urged demand this new wringer, "Bride's Delight," has been designed by the American Wringer Co., Inc., Woonsocket, Rhode Island. It is constructed so that it fits either a round or set tub, has tilting waterboard and is light in weight. Housewives will find their labors considerably lightened by the use of this wringer as it is not necessary to start the washing machine where light weight clothes are to be laundered or rinsed after the wetwash. The rolls are of rust proof construction and of the same high grade rubber as is used on all Horseshoe brand wringers.



Horseshoe Brand Wringer

Shoe Fastener

This new type of shoe fastener is designed to give a wider range of usefulness to metal fasteners now on the market. Instead of being attached to the edge of the upper leather or fabric, the fastener is held by an elastic stay; the stay, in turn, being anchored to the shoe upper. It is the claim of the inventor that this may be used on golf, tennis, basketball and track shoes; infants' and children's shoes; and also on footgear for stout, obese and aged people where ease and shoe comfort are important factors. The elasticity makes it easier to put on and take off footwear and also makes for the comfort of the persons with high insteps or fat feet who have suffered in the past from the inelasticity of this type of shoe fastener.—Elmer L. Briggs, 161 Devonshire street, Boston, Massachusetts.



Fastener Attached to Elastic Stay

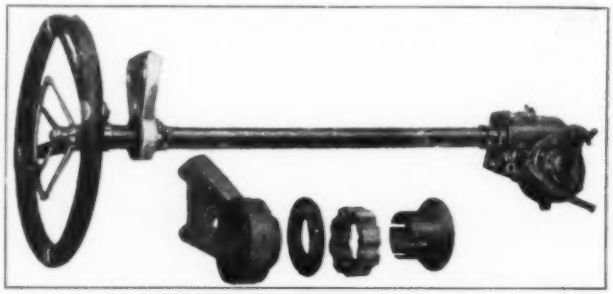
Miniature Tire Tray

An exact replica of its big serviceable brother—the Silvertown heavy duty tire—is the miniature tire which surrounds this sporty little ash tray which also may do serviceable duty on top of the busy office desk. The trays are roomy, measuring 6¼ inches across, and made of green glass, the surrounding tire preventing the marring of the finest polished furniture, besides helping to build profitable business connections. The manufacturer of this clever and useful rubber novelty is The B. F. Goodrich Rubber Co., Akron, Ohio.

Goodrich Silvertown Ash Tray

Rubber Insulated Steering Wheel and Column

A new departure in steering wheel and column for trucks is here pictured. The object of the combination is to enhance the ease of operation by eliminating as far as possible the vibrations usually transmitted to the driver. These are in part cut off by cushioning the column by surrounding it with a rubber ring where it passes through the bracket attached to the dash. All vibrations that pass this point are eliminated by the steering wheel which is built up of rubber and fabric plies over a flexible metal core. It is not only soft to the touch but sufficiently flexible to absorb the fatiguing vibrations always present on the steering wheels of solid tired vehicles. The rubber wheel not only insures a good grip to the bare hand but also for woolen gloves.—International Motors Corp., New York, N. Y.



Shock Absorber Steering Wheel and Column

Football Shirt and Hood

The purpose of this garment, the Parka, is to protect the player from catching cold while on the side lines between quarters of play, when he is naturally overheated from his exertions. It is rain proof and, in addition to keeping the body dry, forms a protection from wet bench seats.

The Parka is blanket lined with rubber friction between the outside material and lining and is made as a shirt and hood. It is a slip-over, cut down the front about 8 or 10 inches to permit the head coming through, this opening being equipped with snap fasteners. The wrists have draw strings so that they may be tightened to prevent circulation of air. The hood when not in use lies on the back of the shirt. —Rawlings Manufacturing Co., Twenty-third and Lucas avenue, St. Louis, Missouri.

Football Parka

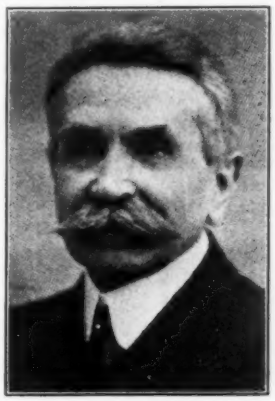
Rubber Coated Centrifugal Basket

One chemical plant, where it is necessary to remove a solid material from a liquor containing hydrochloric acid, uses a steel centrifugal basket to which is applied, by a special process, a rubber coating. The basket is made with 5/16-inch holes into which is placed a special rubber washer having ¼ or ⅛-inch opening. Sheet rubber is then applied on both the outside and inside of the basket with holes trimmed to correspond to the outside of the rubber washer. The basket is then vulcanized resulting in a hard rubber coating which protects the steel of the basket.

The Obituary Record

French Rubber Manufacturer and Author

ANNOUNCEMENT has been recently made of the death of M. Henri-Gaspard Lamy-Torrilhon, head of the well-known French rubber organization of Torrilhon & Cie, Clermont-Ferrand.



M. Lamy-Torrilhon

Born in 1851 at Clermont-Ferrand, France, M. Lamy-Torrilhon early became associated with the rubber industry, being employed in 1870 as chemist in the rubber works of J. B. Torrilhon, one of the pioneer rubber manufacturers of France. In 1877 he married the daughter of his employer, and continued working with him until the latter's death in 1911. In 1887 the son-in-law was appointed manager of the Paris branch, occupying that position until the formation of the Torrilhon company.

M. Lamy-Torrilhon gradually became an authority in the rubber industry, his published works including a volume dealing with the subject of rubber and gutta percha, while he also translated into the French language other English and German books following similar lines. From time to time he furnished various publications with articles on the production of rubber, contributing especially to the Rubber Section of the *Journal d'Agriculture Tropicale*. He had been a member of the French Committee for Foreign Exhibitions, and was president of the Installation Committees of the Turin Exhibition in 1911 and the Ghent Exhibition in 1913. At the time of his death he was honorary president of the Chambre Syndicale des Caoutchoucs, Gutta Percha, Tissus Elastiques, etc. He had been honored by being appointed a Chevalier of the Legion d'Honneur.

President of the C. E. Conover Co.

On September 6, 1926, the death occurred of J. Dey Conover, who since 1891 had been president and general manager of The C. E. Conover Co., 319 Fifth avenue, New York, N. Y., an organization manufacturing waterproof sheetings and various rubber specialties. Mr. Conover was a capable business man, and will long be remembered by his many friends for his kindly character.

Dean of the German Rubber Industry

Although Dr. Friedrich Kuhlemann, general director of the Harburger Gummi-Warenfabrik Phönix, A. G., Harburg, a. E., was known to be suffering since June last, his death on September 4, 1926, came as a shock to the German rubber industry of which he had been the leader since the passing of Dr. Seligmann, of the Continental Company.

The deceased was in his 63rd year and had served the rubber industry long and faithfully. After many extensive journeys and voyages and some activity in the Austrian rubber industry, Dr. Kuhlemann joined the Harburger Gummi-Warenfabrik "Phönix," A.-G., on April 1, 1909. In 1913 we find him a member of the board and in 1922 General Director. Dr. Kuhlemann took an active interest in the welfare of his employes as the various "Phönix" institutions testify. He was a lover of sports and encouraged all the branches of sporting activities.

His passing is deeply felt by the entire German rubber industry which loses in him a sincere and ever helpful friend.

President of Chemical & Vacuum Machinery Co.

On August 9, 1926, E. G. Rippel, president of the Chemical & Vacuum Machinery Co., Inc., Buffalo, New York, died suddenly in Cleveland, Ohio. Born in Dover, Ohio, in 1869, Mr. Rippel's first business connection was with the Ball Engine Co., Erie, Pennsylvania, although his best-known work grew out of his connection with the Buffalo Foundry & Machine Co., which he organized in 1901 and from which he retired in 1922.

E. G. Rippel

During this period of twenty-one years, Mr. Rippel accomplished much in bringing his company to the attention of the chemical engineering industries, particularly through his methods of industrial research and the development of a research laboratory as an important adjunct to the work of his organization. He was a believer in advertising and publicity work, and much of the success of the Chemical Exposition, especially in its earliest years, was due to his efforts toward bringing its displays to the attention of the public.

Following a year or two of rest after his retirement from the Buffalo Foundry & Machine Co., Mr. Rippel established the Chemical & Vacuum Machinery Co., of which organization he was president at the time of his death. He is survived by his widow and a daughter.

AMERICAN EXPORTS AND IMPORTS OF RUBBER AND RUBBER GOODS

Some important statistics regarding the American rubber industry, and indicating a steady advance, appear in a bulletin issued by the Chamber of Commerce of the United States, and entitled "Our World Trade, January-June, 1926." According to these compilations, crude rubber (including latex) continues as the leading commodity imported by the United States, with a value for the six months in question 117.4 greater than that of the corresponding six months' period of 1925, the figures being respectively $321,988,000 and $148,128,000. A comparison as to quantity shows a gain in 1926 of 33,486,000 pounds, or 7.8 per cent.

Exports of rubber manufactures represent in general an advance also, although shipments of automobile casings have declined in number 8.1 per cent during the first half of 1926 as compared with the 1925 period, and pneumatic tubes have fallen off by 19.6 per cent. The values for these goods have however increased 39.5 per cent, or $15,127,000 for tires in the first six months of 1926 and $10,843,000 in 1925. Exports of rubber footwear have shown a quantity gain of 11.5 per cent, or 3,395,000 pairs in 1926 as against 3,045,000 pairs in 1925.

UNITED STATES EXPORTS OF RUBBER BOOTS AND SHOES, INCLUDING shipments to Alaska, Hawaii, and Porto Rico, have shown a steady increase in volume in recent years, as the following figures indicate: 1922, 4,510,000 pairs; 1923, 6,165,000; 1924, 7,090,000; and 1925, 7,295,000.

This elaborate window display of the United States Rubber Co., 1790 Broadway, New York, N. Y., has attracted much attention because of its interesting and educational features. On the painted backgrounds are indicated the methods of tapping rubber trees, collecting and transporting latex, producing sprayed rubber, compounding rubber and making Royal Cord tires. In the foregrounds are seen examples of the company's deversified rubber products.

SEVENTY-FIFTH ANNIVERSARY OF MANY RUBBER ORGANIZATIONS

In celebrating its seventy-fifth anniversary, the *New York Times* has prepared a booklet in which are listed companies and organizations in the United States and Canada which have a history dating back for three-quarters of a century or more. The following rubber companies or those associated with the rubber industry are recorded:

Farrel Foundry & Machine Co., Ansonia, Connecticut.
Birmingham Iron Foundry, Derby, Connecticut.
E. I. du Pont de Nemours & Co., Wilmington, Delaware.
Poole Engineering & Machine Co., 323 S. Howard street, Baltimore, Maryland.
Alfred Hale Rubber Co., Atlantic, Massachusetts.
Hodgman Rubber Co., Framingham, Massachusetts.
A. Schrader's Sons, Inc., 470 Vanderbilt avenue, Brooklyn, New York.
Gutta Percha & Rubber Mfg. Co., 240 Kensington avenue, Buffalo, New York.
American Hard Rubber Co., 11 Mercer street, New York, N. Y.
Battelle & Renwick, 80 Maiden Lane, New York, N. Y.
Grasselli Chemical Co., 347 Madison avenue, New York, N. Y.
Innis Speiden & Co., Inc., 46 Cliff street, New York, N. Y.
Joseph A. McNulty, 114 Liberty street, New York, N. Y.
The New Jersey Zinc Company, 160 Front street, New York, N. Y.
New York Belting & Packing Co., 91 Chambers street, New York, N. Y.
William H. Scheel, 179 Water street, New York, N. Y.
Struthers-Wells Co., 50 Church street, New York, N. Y.
The Watson-Stillman Co., 75 West street, New York, N. Y.
Whitall Tatum Co., 46-48 Barclay street, New York, N. Y.
Taylor Instrument Companies, 95 Ames street, Rochester, New York.
Goodyear Tire & Rubber Co., Akron, Ohio.
H. W. Butterworth & Sons Co., York and Cedar streets, Philadelphia, Pennsylvania.
The S. S. White Dental Mfg. Co., 211 S. 12th street, Philadelphia, Pennsylvania.
Westinghouse Electric & Mfg. Co., Pittsburgh, Pennsylvania.

INCREASE IN UNITED STATES EXPORTS OF ELECTRICAL GOODS

Exports of electrical goods from the United States have totaled for the month of July $7,942,000, or an increase of 22 per cent as compared with July, 1925. The largest gain, according to *Commerce Reports*, was in shipments of bare copper wire, which showed an advance of $237,946, while exports of insulated copper wire and cable increased $31,338, or about 9 per cent.

STATEMENT OF THE INDIA RUBBER WORLD

Statement of the ownership, management, circulation, etc., required by the Act of Congress of August 24, 1912, of THE INDIA RUBBER WORLD, published monthly at New York, N. Y., for October 1, 1926.

State of New York } ss.:
County of New York }

Before me, a Notary Public in and for the State and county aforesaid, personally appeared E. M. Hoag, who, having been duly sworn according to law, deposes and says that she is the business manager of THE INDIA RUBBER WORLD, and that the following is, to the best of her knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The India Rubber Publishing Co., 25 West Forty-fifth street New York, N. Y.; Editor, Henry C. Pearson, 25 West Forty-fifth street, New York, N. Y.; Managing Editor, William M. Morse, 25 West Forty-fifth street, New York, N. Y.; Business Manager, E. M. Hoag, 25 West Forty-fifth street, New York, N. Y.

2. That the owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other uninc rporated concern, its name and address, as well as those of each individual member, must be given.) The India Rubber Publishing Co., Henry C. Pearson—both of 25 West Forty-fifth street, New York, N. Y.; Edward Lyman Bill, Inc., Caroline L. Bill, Edward Lyman Bill, Raymond Bill, Randolph Brown, H. R. Brown, Carleton Chace, Wm. A. Low, Lee Robinson, J. B. Spillane, B. B. Wilson—all located at 383 Madison avenue, New York, N. Y.; Edward Van Harlingen, 209 South State street, Chicago, Illinois.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are: None.

4. That the two paragraphs next above, giving the names of the owners, stockholders, and security holders, if any, contain not only the list of stockholders and security holders as they appear upon the books of the company but also, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting, is given; also that the said two paragraphs contain statements embracing affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner; and this affiant has no reason to believe that any other person, association, or corporation has any interest direct or indirect in the said stock, bonds, or other securities than as so stated by her.

(Signed) E. M. HOAG, Business Manager.

Sworn to and subscribed before me this 27th day of Sept., 1926.
Wm. A. Low, Notary Public, New York County, No. 417, Register No. 7340. Certificate filed in Queens County, No. 3294.

(Seal) My Commission expires March 30, 1927.

Financial and Corporate News

The Boston Woven Hose & Rubber Co.

THE statement submitted by the treasurer of the Boston Woven Hose & Rubber Co., Watertown, Massachusetts, again reflects the strong position of the company at the close of its fiscal year, with a substantial increase in the cash balance on hand as compared with last year and no bank loans or other indebtedness except current accounts payable.

Gross sales for the year amounted to $10,923,226.13 compared with $10,343,050.27, a gain of 5.6 per cent.

Following the usual custom of the company, merchandise inventory has been conservatively taken, pricing all materials either at market or cost, whichever was the lower. The year opened under most favorable conditions, substantial orders in hand, well adjusted inventory and the prospect of continued good business. Crude rubber was selling for about $1.00 per pound with all indications of higher prices caused by the prospect of an actual shortage. It continued to advance until November when the decline in price began and in February it was selling for about 50 cents per pound. All losses caused by this condition have been taken in the year's operation.

Due to falling market in raw materials, sales resistance became more acute, and in order to maintain the volume of business the company was forced to sell its product at reduced prices. During the last six months keen competition has existed and there has been no stability of price. Notwithstanding these adverse conditions the company has earned by a safe margin the dividend paid on common stock after taking care of liberal depreciation and allowing for preferred dividend, taxes and interest, but the amount that will be added to surplus has been reduced.

Factory efficiency is higher than ever before and a material decrease has been shown in operating expense in all departments. With more normal and stable conditions the company faces the coming year with confidence and believes that a return will be made at the end of the year comparable with any that has been made in the past.

Hood Rubber Financing

Hornblower & Weeks have purchased from the Hood Rubber Co., 45,000 shares of the company's no par common stock. This stock, which is priced at $50 per share, has been resold to the public. Following the $5,000,000 ten-year 5½ per cent note issue, Hood Rubber capitalization will consist of $11,000,000 funded debt, $7,565,800 preferred stock, including Hood Rubber Products preferred, and 200,000 shares of common stock.

Early application will be made to list Hood common on the New York Stock Exchange. The $4 dividend, which has been in force since 1920, will be maintained on the increased issue of common.

It is stated that sales for first five months of the new fiscal year, which began April 1, 1926, are ahead of the same period of last year. About two-thirds of the company's business is footwear and the remainder tires, all of which is sold to the retail trade.

The inventory position is quite satisfactory. Crude rubber on hand and contracted for is carried at well below 45 cents a pound, or practically the current market.

While floating debt has increased above the $9,650,000 figure at the close of the fiscal year March 31, 1926, the normal course of the business plus proceeds of present financing should permit the company to end its current fiscal year entirely free of bank obligations.

Dividends Declared

COMPANY	Stock	Rate	Payable	Stock of Record
Dominion Rubber Co	Com.	1¾ % q.	Sept. 30	Sept. 27
Firestone Tire & Rubber Co	Com.	$1.50 q.	Oct. 20	Oct. 10
Firestone Tire & Rubber Co	Pfd.	1½ % q.	Oct. 15	Oct. 1
Firestone Tire & Rubber Co	7% Pfd.	1¾ % q.	Nov. 15	Nov. 1
Fisk Rubber Co	1st Pfd.	$1.75 q.	Nov. 1	Oct. 15
Fisk Rubber Co	Conv. Pfd.	$1.75 q.	Nov. 1	Oct. 15
Fisk Rubber Co	2nd Pfd.	$1.75 q.	Nov. 15	Nov. 1
General Tire & Rubber Co	Com.	$2.00 q.	Nov. 1	Oct. 20
Goodrich, B. F., Co	Com.	$1.00	Dec. 1	Nov. 15
Goodrich, B. F., Co	Pfd.	$1.75	Jan. 3, 1927	Dec. 15
Goodyear Tire & Rubber Co	(Acc.) Pfd.	$4.75	Nov. 15	Oct. 26
Hood Rubber Co	7½ % Pfd.	$1.88 q.	Nov. 1	Oct. 21
Hood Rubber Co	7% Pfd.	1¾ % q.	Nov. 1	Oct. 21
Hood Rubber Co	Pfd.	$1.75 q.	Dec. 1	Nov. 20
Stedman Products Co	Pfd.	$1.75 q.	Oct. 1	Sept. 22
United States Rubber Co	1st Pfd.	$2.00 q.	Nov. 15	Oct. 20

New York Stock Exchange Quotations

October 21, 1926

	High	Low	Last
Ajax Rubber, com	7¾	7½	7¾
Fisk Rubber, com	15¾	15¼	15⅝
Goodrich, B. F., Co., com. (4)	45½	45⅛	45½
Goodyear Tire & Rubber, pfd (7)	107⅛	107	107
Intercontinental Rubber, com. (1)	14½	14¼	14½
Lee Rubber & Tire, com	7½	7½	7½
Miller Rubber, com. (2)	32	31⅝	32
Norwalk Tire & Rubber, com	4½	4¼	4¼
United States Rubber, com	53¾	52⅜	52½

Akron Rubber Stock Quotations

Quotations of October 21, supplied by Otis & Co., Cleveland, Ohio.

COMPANY	Last Sale	Bid	Asked
Aetna com	16½	...	17
Aetna pfd	93	...	93
Falls com	9½	6¼	9⅝
Falls pfd	18¾	...	19⅝
Faultless com	41	40½	42
Firestone com	112½	112½	...
Firestone 1st pfd	102	100½	...
Firestone 2nd pfd	97	97	97½
General com	145	140	146
General pfd	107½	...	...
Goodrich com	53	...	...
Goodrich pfd	98	...	...
Goodyear com. V. T. C	31½	29	33½
Goodyear pfd. V. T. C	110	105	...
Goodyear pr. pfd. V. T. C	107	...	...
India com	29¾	29	31½
Miller com	34½	...	...
Miller pfd	100½	100	100¾
Mohawk com	34½	...	...
Mohawk pfd	73	...	70
Seiberling com	22¼	22	23
Seiberling pfd	100	93¾	96
Star com	11	...	...
Star pfd	35	...	...
Swinehart com	8½	...	...

New Incorporations

ACME AUTO SUPPLY CO., INC., September 11, 1926 (New Jersey), capital stock of $100,000, divided into 1,000 shares of $100 each. Incorporators: Morris Koffman, 40 Fourth street; Leo Robbins, 301 Clifton avenue; and Phil King, Monmouth avenue, all of Lakewood, New Jersey. Principal office, Lakewood, New Jersey. To deal in automobile supplies and accessories.

ARCHON RUBBER HEEL CORPORATION, October 6, 1926 (Delaware), capital stock of $250,000, par value $1. Incorporators: J. K. Sinclaire, and W. M. Wahlstad, both of 70 Fifth avenue, New York City, and A. Roy Myers, 145 West 12th street, New York City. Principal office, with Prentice-Hall, Inc., 309-311 So. State street, Dover, Delaware. To manufacture and deal in rubber and gutta percha and all goods of which rubber and gutta are parts.

AUBURN TIRE & SERVICE CO., INC., October 16, 1926 (New York), capital $25,000. Incorporators: Patrick S. Needham, 11 Court street; Joseph LaBreck, 22 Chapel street, and Edward T. Boyle, 11 Mary street, all of Auburn, New York. Principal office, Auburn, New York. To deal in auto accessories.

GIBSON-FITHIAN TIRE CO., August 13, 1926 (Kentucky), capital $5,000, divided into 100 shares of the value of $50.00 each. Incorporators: Owen T. Gibson and Mary Allen Gibson, both of Paris, Kentucky, and Harry Brent Fithian and Rena C. Fithian, both of Lexington, Kentucky. Principal office, Lexington, Kentucky. To buy and sell automobile tires and accessories of all kinds.

JONES-TONER MOTORS, INC., September 15, 1926 (New Jersey), capital 2,500 shares without nominal or par value. Incorporators: Robert E. Jones, 24 Clarendon Place, Bloomfield, New Jersey; Harry A. Toner, 452 Fourth avenue, and H. Edward Toner, 790 Broad street, both of Newark, New Jersey. Principal office, 790 Broad street, Newark, New Jersey. To deal in automobile accessories, machinery, etc.

MARDIS PUNCTURELESS TIRE CO., September 16, 1926 (Delaware), capital 50,000 shares of common stock, par value $10. Incorporators: W. I. N. Lofland, William Virdin and Rebecca Dunn, all of Dover, Delaware. Principal office, with the Capital Trust Company of Delaware, Dover, Delaware. To manufacture, buy, sell and deal in tires and combination wheels and tires for motor driven vehicles.

NEVER-WET DISTRIBUTOR COVER, INC., September 21, 1926 (New Jersey), capital $20,000. Incorporators: Gordon A. Knapp, Arthur Fryor, Jr., and Kays R. Morgan, all of Asbury Park, New Jersey. Principal office, 207 Lakeview avenue, Colonial Terrace, Asbury Park, New Jersey. To manufacture rubber specialty goods.

NORWALK TIRE SALES OF RHODE ISLAND, August 26, 1926 (Rhode Island), capital 250 shares of common stock without par value. Incorporators: John J. Rosenfeld, James H. Hagan, Jr., and C. Bird Keach, all of Providence, Rhode Island. Principal office, Providence, Rhode Island. To deal in automobile tires.

POSNER BRAKE LINING SERVICE, INC., September 11, 1926 (New Jersey), capital stock 500 shares without par value. Incorporators: Harry Posner, Samuel Posner, Henry R. Willye and Sara Posner, all of 391 Halsey street, Newark, New Jersey. Principal office, 391 Halsey street, Newark, New Jersey. To manufacture and deal in asbestos and other brake linings.

POTOMAC TIRE & PATCH CO., October 8, 1926 (Delaware), capital stock of $25,000, par value $10. Incorporators: Mark W. Cole, James H. Hughes and James L. Wolcott, all of Dover, Delaware. Principal office, with the Corporation Trust Company of Delaware, Dover, Delaware. To deal in, rebuild and repair tires for automobiles, bicycles, carriages and vehicles of all kinds.

PRATER TIRE & RUBBER CO., September 27, 1926 (Delaware), capital $100,000, par value $100. Incorporators: E. E. Craig, A. L. Raughley and M. S. Cook, all of Dover, Delaware. Principal office, with the United States Corporation Company, Dover, Delaware. To manufacture, produce, buy, sell, etc., rubber and gutta percha and all goods of which rubber and gutta percha are parts.

PRENDERGAST QUALITY SHOE SHOP, INC., September 14, 1926 (Delaware), capital $25,000, par value $10. Incorporators: M. M. Lucey, M. B. Reese, and L. S. Dorsey, all of Wilmington, Delaware. Principal office, with the Colonial Charter Company, 927 Market street, Wilmington, Delaware. To deal in all articles made of rubber and leather.

PUNCTURE PROOF AUTO TIRE CO. OF AMERICA, September 25, 1926 (Delaware), capital $5,000,000. Incorporators: F. R. Hansell, and J. Vernon Pimm, both of Philadelphia, Pennsylvania, and E. M. MacFarland, Camden, New Jersey. Principal office, Wilmington, Delaware. To deal in rubber goods of all kinds.

SOUTHERN AUTO & TIRE CO., September 8, 1926 (Mississippi), capital stock $50,000. Incorporators: C. P. Sillinger, M. D. Feld, Victor Johnson, W. O. Menger, H. D. Gaunt, and R. B. Hall, all of Vicksburg, Mississippi. Principal office, Vicksburg, Mississippi. To deal in automobile accessories, supplies and merchandise, and to own and operate repair shops.

SOUTHERN TIRE CO. OF NATCHEZ, INC., September 8, 1926 (Mississippi), capital $5,000. Incorporators: Mrs. K. B. Surget, F. R. Hymel and L. S. Stanton, all of Natchez, Mississippi. Principal office, Natchez, Mississippi. To deal in automobile accessories of all kinds and to conduct repair shops.

TIRE ASSOCIATES, INC., October 2, 1926 (Delaware), capital stock $100,000, par value $100. Incorporators: T. L. Croteau, A. L. Miller and Alfred Jervis, all of Wilmington, Delaware. Principal office, with the Corporation Trust Company of America, DuPont Building, Wilmington, Delaware. To manufacture and merchandise tires.

WHITEY MASON TIRES, INC., June 14, 1926 (Oklahoma), capital stock is $15,000. Incorporators: J. R. Mason, Edna I. Mason and M. A. Hughes, all of Oklahoma City, Oklahoma. Principal office, Oklahoma City, Oklahoma. To deal in automobile tires and accessories and for operating tire repair shops and service stations.

THE WOODSTOCK RUBBER CO., LTD., June 30, 1926 (Province of Ontario), capital $250,000. Incorporators and officers: A. F. Dwyer, president; H. C. Milhan, secretary-treasurer; R. S. Keller, P. M. Dewan and Wm. Ferguson, directors; all of Canada. Principal office, Woodstock, Ontario, Canada. To manufacture rubber footwear.

PRELIMINARY STATISTICS OF DEALERS' AUTOMOBILE TIRE STOCKS

The fifth semi-annual survey of the stocks of automobile tires and inner tubes held by United States dealers is now being prepared by the Department of Commerce. The following totals, as of October 1, 1926, are, however, preliminary and subject to revision. It has been found from the 29,503 returns thus far received that about the same percentage of dealers reported as in the survey of October 1, 1925. Dealers carrying less than 10 casings comprised 24.95 per cent of the total, those handling from 10 to 25 casings represented 32.30 per cent, while those with a stock above 1,000 casings are recorded at .29 per cent. A final and detailed summary is soon to be issued by the Rubber Division.

Dealers' Stocks of Automobile Tires

	October 1, 1926			October 1, 1925		
	Number	Dealers Reporting	Average per Dealer	Number	Dealers Reporting	Average per Dealer
Total casings (including balloons)	1,415,155	29,503	48.0	2,000,150	35,331	56.6
Balloon casings (alone)	372,877	18,393	20.3	283,552	16,240	17.5
Inner tubes	2,640,247	29,117	90.7	3,486,120	35,163	99.1
Solid and cushion tires	34,037	1,584	21.5	53,060	2,122	25.0

Rubber Industry Outlook

Official surveys and commercial opinion are agreed that the volume of general business in October was higher than that of a year ago. The drop in raw cotton prices that began early in September continued unabated for the first 3 weeks of October. This unfortunate situation for the cotton growers afforded the tire and other divisions of the rubber industry an opportunity of securing cotton below the cost of production.

Available stocks of crude rubber have considerably increased in the past month. London stocks are 5,000 tons higher than one month ago, while domestic consumption, at 33,000 tons for September, was 1,750 tons above the monthly average consumption so far this year. Prices have been maintained fairly constant but will average below the pivotal price of 21 pence London.

Therefore the exportable allowance for the quarter beginning November 1 will be reduced to 80 per cent of standard production under the revised regulations announced from London. The pivotal price has been raised from 21 to 24 pence to control the increase or decrease of exportable allowance for any given quarter. The change in restriction regulations, however, was not as drastic as the trade anticipated, since unused export coupons representing about 40,000 tons were not cancelled and, according to the extent used in the next quarter, will offset the 20 per cent reduction from standard production. The new regulations strengthen the working of the restriction plan to increase prices.

Automobile production continued at high levels during October but is inclined to slow down in spots. In the first 9 months of this year, 1,700,000 more tires were required for original equipment than in the same period last year.

A record output was set in the production of tires for the third quarter of this year. Tire schedules for the remainder of the year are expected to provide for a decreased output. A distinct trend is noted in tires toward smaller sizes due to the increasing popularity of smaller cars modeled after European types.

General rubber goods production in every line is proceeding with great activity. This condition is especially notable in mechanical goods, footwear, heels, proofed goods and insulated wire. Competition to maintain capacity production has become especially keen in the lines mentioned, temporarily reducing or eliminating profits on various standard rubber products to the advantage of dealers.

AMERICAN MOTOR VEHICLE REGISTRATION

The grand total of motor cars and trucks registered in the United States as of June 30, 1926, is estimated as 19,697,832, according to compilations prepared by the Bureau of Public Roads of the United States Department of Agriculture. This represents an increase over the corresponding date of the year previous of 10.8 per cent. In this total are included the figures for passenger cars, taxis and buses, or 17,288,774; while trucks and road tractors are estimated at 2,409,058. The five states having the largest registration of passenger cars are as follows: New York, 1,562,492; California, 1,459,570; Ohio, 1,370,756; Pennsylvania, 1,326,682; and Illinois, 1,217,265.

AMERICAN CRUDE RUBBER IMPORTS—JANUARY-JUNE, 1926

Imports into the United States of crude rubber have increased during the first half of 1926 in both volume and value as compared with the corresponding six months of 1925. The following import statistics are from *Commerce Reports*:

From		Jan.-June, 1925		Jan.-June, 1926	
Straits Settlements	*lbs.*	240,939,000	$82,083,000	280,698,000	$193,370,000
Ceylon	*lbs.*	31,777,000	$11,321,000	39,226,000	$27,256,000
Netherlands East Indies	*lbs.*	78,008,000	$26,036,000	83,021,000	$54,533,000
India	*lbs.*	2,233,000	$747,000	2,952,000	$1,863,000

News of the American Rubber Trade

East and South

New executives of the American Hard Rubber Co., 11 Mercer street, New York, N. Y., include the following: William W. Weitling, chairman of the board; Edwin S. Boyer, president and general manager; James F. Giles, vice president and director of sales; and Edwin W. Belcher, secretary and treasurer.

Francis R. Henderson was reelected president of the Rubber Exchange of New York at the directors' meeting October 19. Other officers elected include Charles T. Wilson, vice president, and J. Chester Cuppia, treasurer. The Board of Governors consists of William E. Bruyn, James P. Grant, David S. Kubie, Jerome Lewine, Fred Pusinelli and Clinton T. Revere.

The Westminster Tire Corporation, 249-251 West 64th street, New York, N. Y., which is serving a group of tire factories as a source of supply for dealers, has recently taken over the entire inventory and national distribution of the Braender Rubber & Tire Co., comprising the Howe and Braender lines. Lloyd L. Clayton is treasurer.

The estate of Frederick G. Achelis, president of the American Hard Rubber Co., who died September 18, is valued at $210,000, of which more than $110,000 is represented by real estate, and approximately $100,000 by personal property. According to the conditions of the will, Mrs. Helen B. Achelis, the widow, and three children receive the bulk of the estate, while Frank D. Hendrickson, a brother-in-law, receives 2 per cent of the value of the property, and shares in one-fourth of the rest. Mr. Hendrickson and the widow are named as executors.

C. W. Christensen, technical representative in the Ohio territory of The Rubber Service Laboratories Co., 611 Peoples Savings & Trust Building, Akron, Ohio, has been transferred to the organization's eastern division, with headquarters in New York, N. Y. Warren H. Jones, formerly assistant superintendent of the Pharis Tire & Rubber Co., has joined the Rubber Service staff, his territory covering the southern states.

New executives of The C. E. Conover Co., 319 Fifth avenue, New York, N. Y., include the following: Cecil S. Conover, president; A. J. Davies, vice president; George A. Downs, treasurer; and H. T. Van Duzer, secretary. The organization, which maintains a factory at Red Bank, New Jersey, has since 1891 been engaged in the manufacture of Naiad dress shields, dress linings, waterproof sheetings, etc.

T. H. Hewlett, manager of the Anchor Chemical Co., Manchester, England, R. T. Vanderbilt & Co.'s representative in Great Britain, is in New York with his brother Ernest Hewlett, one of his sales force. Their mission is to familiarize themselves with the accelerators, anti-oxidants and compounding ingredients manufactured and sold by the R. T. Vanderbilt Co., 50 East 42nd street, New York, N. Y.

The Akron Standard Mold Co., Akron, Ohio, manufacturer of rubber machinery, reports another enlargement of its sales organization, with H. J. Smith representing the company in the East. Mr. Smith has been long associated with the automotive industry.

The Dexter Rubber Manufacturing Co., Goshen, New York, specializes in the manufacture of tire and rim flaps, patches, cement, repair kits, etc. The company's illustrated booklet entitled "The Second 10,000 Miles" describes its products.

Press reports state that the Syracuse Tire & Rubber Co., Syracuse, New York, has filed a voluntary petition in bankruptcy in the Federal Court of Utica. Liabilities of the company are given as $331,068 and assets as $324,969, the latter including a plant, valued at $300,000.

Harold O. Smith, for many years associated with both the automobile and the tire industries, has been appointed chief of the Automotive Division of the Bureau of Foreign and Domestic Commerce, Department of Commerce. Mr. Smith has been president of the Indianapolis Rubber Co. and the G. & J. Tire Co., while he was also one of the organizers of the American Motor Car Association. He has served as one of the directors of the National Automobile Association and of the National Automobile Chamber of Commerce.

The Thermoid Rubber Co., Trenton, New Jersey, announces the removal of one of its branches to 248 Chestnut street, Philadelphia, Pennsylvania.

Plans have been prepared by the Belmont Packing & Rubber Co., 1133 Arch street, Philadelphia, Pennsylvania, for a two-story plant addition, the new construction to measure 80 by 130 feet and to cost approximately $50,000. The company specializes in the manufacture of packings for all purposes.

The Star Rubber Co., Inc., Akron, Ohio, announces that Thomas L. Moore has been made manager of the company's branch at 1302 McCallie avenue, Chattanooga, Tennessee. The new division, known as Tom & Tom Tire Service, Inc., is in charge of Mr. Moore and Thomas R. Wert.

The Blackwood Tire & Battery Co. maintains general offices at 912-20 Broad street, Nashville, Tennessee, and is also carrying forward eight tire stores in the city of Nashville. H. O. Blackwood heads this distributing organization, which represents a business averaging $1,000,000 annually.

George C. Logan began on October 1 his new duties with The Goodyear Tire & Rubber Co., Akron, Ohio, as representative in charge of bus and truck tire sales in the company's southern division. He will make his headquarters in Atlanta, Georgia.

The Dixie Rubber Products Co., 275 Marietta street, Atlanta, Georgia, was organized last year for the purpose of manufacturing blowout boots, skived shoes, and tire patches. In addition the company markets the Dixie Gray inner tube, while the plant has a capacity for producing 1,000 blowout boots daily. B. S. Davis is manager and D. E. Tyler is sales manager.

A new building, representing an outlay of approximately $200,000, is being erected at Avenue G and 21st street, Birmingham, Alabama, by the Standard Rubber Co., Inc., a distributer of Dayton Thorobred cord tires. Executives include Carr McCormack, president; and J. C. Bridges, general manager.

During the recent annual meeting of the Bibb Manufacturing Co., Macon, Georgia, manufacturer of tire fabric, the following executives were reelected: W. D. Anderson, president; E. T. Comer, chairman of the board; James H. Porter, vice president; A. A. Drake, Jr., secretary and treasurer; and C. C. Hertwig, assistant treasurer. The Bibb organization, which operates ten mills located at Macon, Porterdale, Columbus, and Reynolds, Georgia, reports that all the plants are on a full time schedule, and are working at capacity.

R. H. Prinz, general sales manager of the Cooper Corporation, Cincinnati, Ohio, manufacturer of Cooper tires and batteries, has returned from a visit to the Atlanta and Dallas branches where he found satisfactory sales conditions. T. L. Matthews is in charge of the Atlanta division, while E. L. Hawkins has been appointed sales representative for the southern and southeastern part of

Texas. Mr. Hawkins and his assistant, George Riddell, will travel this Texas territory.

Robins Acquires Hewitt Organization

The Robins Conveying Belt Co., Passaic, New Jersey, has acquired control of the Hewitt Rubber Co., Buffalo, New York, and its subsidiary, the Gutta Percha & Rubber Manufacturing Co. Thomas Robins, president of the Passaic company, will be chairman of the board of the rubber subsidiaries, and Thomas Matchett, now vice president and general manager of the Robins organization, will be president and general manager of the rubber companies. John H. Kelly and Frank V. Springer wil be vice presidents of the Hewitt company while Frank Miller and Amadee Spadone will continue to direct the policies of the Gutta Percha division.

New Jersey

The rubber situation in New Jersey remains fairly good and prospects are bright for the coming winter. The Trenton manufacturers of tires and mechanical goods report that business is very satisfactory and that prices of tires and tubes will remain stable during the fall and winter. There has been some improvement in the hard rubber field during the past month and manufacturers are more encouraged.

The Pocono Rubber Cloth Co., Trenton, New Jersey, will shortly begin the manufacture of rubber golf bags in its new addition recently completed. Some time ago the company began the manufacture of these golf bags, and the growing business has made necessary a new addition. The concern now expects to turn out 15,000 golf bags a month and has orders enough to keep the factory busy during the coming winter.

The Combination Rubber Co., Trenton, New Jersey, continues to operate with two shifts and is now manufacturing 1,000 tires and 1,500 tubes daily.

The Essex Rubber Co., Trenton, New Jersey, is very busy again and reports increased orders for soles and heels, and the company is compelled to operate overtime to fill orders. The company recently completed two large factory buildings, is now erecting a one-story brick building for manufacturing purposes.

The Globe Rubber & Tire Co., Trenton, New Jersey, has been recently incorporated with capital stock of 5,000 shares of no par value. The new company has orders on hand for mechanical goods and tires and expects to be operating by early winter.

The Bergougnan Rubber Corp.'s building, land and equipment were again sold on October 20 to William A. Weinmann, and others. The plant and land brought $90,000, while an adjoining vacant tract was sold for $21,500. The equipment was disposed of separately to various dealers yielding about $6,700. The sale must be approved by Judge William N. Runyon in the United States District Court.

The Fisk Flap Rubber Tube Co., Yardville, New Jersey, reports establishment of a number of new agencies in the East.

John T. Spicer, formerly general sales manager of the Thermoid Rubber Co., Trenton, New Jersey, is now sales manager of the Kelso Manufacturing Co., maker of brake lining, and the Kelso Radio, Inc., manufacturer of radio receiving sets, Trenton, New Jersey.

ACCORDING TO COMPILATIONS PREPARED BY THE DEPARTMENT OF Commerce, the United States production during 1925 of tires and tubes made chiefly for automobiles had a wholesale value of $925,032,833, or an increase of 43.6 per cent over 1923, the last preceding census year for manufactures. The output during 1925 of bicycle and motorcycle tires was estimated at $3,564,933.

Massachusetts

The record breaking activity in the local rubber trade continues unabated. In some lines this is manifested by overtime production schedules geared up to meet a peak demand on short notice, whereas in others where stocks of merchandise were more adequate, an unprecedented volume of orders is reported.

Rubber footwear manufacturers state that the present avalanche of orders from retailers is the largest for some time. It is partly accounted for by the failure of retailers to place their winter orders last spring and therefore makes the bookings at this time unusual and out of line with trade practice. It is really a manifestation of hand-to-mouth buying, and is making it very difficult for the footwear mills to get production to a point which will insure the merchandise being on the dealers' shelves by the time snow flies. Trained footwear makers are not to be had, and most plants are maintaining schools of instruction to increase their personnel. Others are running night shifts in the making departments. It is not expected that output will continue indefinitely at this speed, although present orders insure capacity operation until the middle of December. By that time the trend of the winter weather will be known, and the mills will either keep on producing winter goods or shift over to tennis.

The tennis situation has developed several complications. Prices were set on the new line September 1 at lower figures in view of more stabilized rubber prices and lower cotton. Since then as each successive government cotton report has increased crop estimates and cotton has touched new low levels, tennis manufacturers have been able to purchase requirements more advantageously than was figured for the September 1 prices. As a result, partly due to this phase, and partly to a cut-price war started by some of the smaller companies, the United States Rubber Co. has come out with a new men's, boy's, and youths' trimmed tennis shoe priced at 80 cents whereas the September 1 list priced the shoe of this class at 92 cents. Obviously the new shoe is not a duplicate of the higher priced number, but it is near enough to it in quality to cut the sales of the higher-priced shoe. Many manufacturers are still on the fence as to whether they will touch this class of business at all but it is safe to assume that when the season of 1927 gets under way that all lines will carry a men's trimmed tennis at this price.

The Melrose or Fells plant of the Boston Rubber Shoe Co., is scheduled to reopen November 1 owing to the increased footwear demand. This plant was closed last July and operations concentrated at Plant No. 1 in Malden.

Many New England textile manufacturers as well as the rubber companies are profiting by a lively demand for waterproof clothing. Amoskeag Manufacturing Co., Manchester, New Hampshire, is doing a big business in fabrics of variegated colors and finishes for rubberizing.

Heel and sole demand continues to be brisk especially among the small manufacturers of Massachusetts. Lynch Heel Co., Chelsea, and Killion Rubber Co., Dorchester, report good business.

Rubber tiling is a growing field for local rubber manufacturers. Stedman Products Co., Braintree, Hood Rubber Co., Watertown, and Plymouth Rubber Co., Canton, all in Massachusetts, are now manufacturing this comparatively new rubber product.

A special stockholders' meeting of the Salmon Falls Manufacturing Co., Salmon Falls, New Hampshire, manufacturer of tire fabrics, was held October 21 to consider liquidation of the property. The letter to stockholders emphasizes the present day problems of New England textile manufacturers. There is a possibility of several of the large tire manufacturers who do not

operate their own fabric mills being interested in the property.

W. L. Burgess, formerly sales manager for the Century Tire Co., Chicago, Illinois, has recently joined the Converse organization.

A. G. Walton, stepson of the late Phil M. Riley, associate editor of THE INDIA RUBBER WORLD, has resigned as statistician for the Hood Rubber Co., Watertown, Massachusetts, and entered the public accounting field in Boston.

A. C. Goetz is New England sales representative for the Eagle Picher Lead Co., 101 Park avenue, New York, N. Y., manufacturers of litharge and lead products for the rubber trade.

Turner Halsey Co., 62 Leonard street, New York, N. Y., selling agent for Mount Vernon-Woodberry Mills and the Tallahassee Mills, is represented in New England by J. H. Sutherland and W. J. Balfour with headquarters at 99 Chauncy street, Boston, Massachusetts. Hose and belting duck, enameling duck, drills, and army duck are among the products marketed to the local rubber trade.

Jeffrey H. Barry, of Curran & Barry, 320 Broadway, New York, N. Y., selling agents for Dunson Mills, Hanley Manufacturing Co., and other southern manufacturers of enameling ducks, osnaburgs, drills, and fabrics for the rubber trade, is New England sales representative with offices at 10 High street, Boston, Massachusetts.

Reuben Dunsford, treasurer of the Lowell Insulated Wire Co., Lowell, Massachusetts, has been appointed co-receiver of the Hamilton Manufacturing Co. The first-mentioned organization specializes in the manufacture of Duplex rubber covered wire, lamp cords, automobile cable, etc.

The Link-Belt Co., 910 South Michigan avenue, Chicago, Illinois, is moving its Boston offices on November 1 to more commodious quarters at 1103-1104 Statler Building. E. J. Burnell is manager of the Boston division.

Since the lower tire prices of last July, local manufacturers report increased business on first quality lines, indicating that the motor driving public is becoming more discriminating on tire values.

The Firestone Footwear Co., Hudson, Massachusetts, is producing a large volume of "Faseal" gaiters with a new automatic slide fastener. A group of girl testers walk 17 miles daily testing out the merchandise.

The state reservoirs are at new low levels owing to the long spell of dry weather, which encourages the footwear manufacturers on the grounds that this moisture deficiency will be made up by early snows. The City of Boston has spent nearly $5,000,000 for snow removal equipment as a result of the bad conditions during the heavy storms of last February.

Ohio

While there was some tapering off in production of Ohio rubber factories, particularly in the automobile tire departments, operations during October compared favorably with the same month a year ago, and were not far below the high production record made in September and August. Reports are current that many of the tire factories are going on a five day a week basis in November, indicating there is likely to be a drop of 15 to 20 per cent in production during that month. Current tire production continues at the rate of about 125,000 casings a day in the Akron district, compared with a peak record of approximately 135,000. Those companies which do a large original equipment business with the motor car manufacturers have had to curtail operations more than others, due to a falling off in orders from this source. Retail tire business is expected to be stimulated shortly with announcements regarding the spring dating policy of tire manufacturers. Soliciting of orders for spring delivery probably will start late in November or early December, in the opinion of Akron authorities.

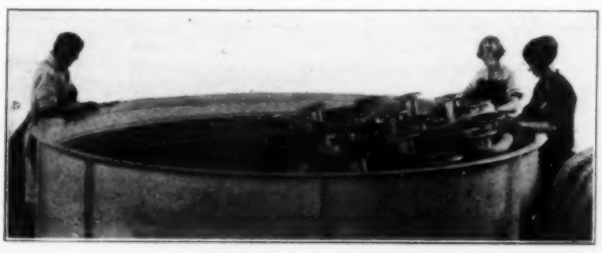
Reports of leading Akron rubber companies show that production in the third quarter, ended September 30, surpassed any previous period in the history of the industry. Shipments to automobile manufacturers and dealers were heavy, and large inventories of finished tires and stocks of high priced crude rubber were worked off, leaving the manufacturers in the best position in some time. Since the lower prices for tires went into effect, profits have been smaller, but it is expected that well managed companies will show satisfactory earnings for the last half of the year, and companies paying dividends on the common stock will earn the annual disbursement by a fair margin.

The Goodyear Tire & Rubber Co. broke all previous tire production records in its factories at Akron and California, during the third quarter, officials have announced. A total of 3,721,209 casings and 3,902,530 tubes were manufactured. Officials of Goodrich, Firestone, Miller, General, Seiberling, Mohawk, India and other companies also report exceptionally large sales and output of tires in that period. The annual report of Firestone will be made public next month and is expected to show the biggest sales in the company's history, for the fiscal year ended October 31.

Considerable confusion prevails among manufacturers as to the future course of the crude rubber market. Many look for a modification of the Stevenson restriction act, bringing about lower rubber prices, while others are expecting the market to go higher next year. Rubber brokers say the manufacturers for the most

Inner Tube Testing Machine

The machine here pictured is designed for testing inner tubes under inflation and stretch. It is unique among the methods utilized for this purpose. The distinctive feature of the device consists of a great wheel which revolves on an inclined axis in a circular tank containing water. One-half of the wheel is always above the water while the opposite half is submerged.



Dunlop Tube Tester

While the spools are above water a tube is mounted over two outer and one inner spools. The big wheel revolves, submerging the tube, and the next tube is mounted in the same way.

When the upper side of the large wheel is out of water, the three spools on which any tube is mounted are close together. As two of these wheels revolve and the tube gradually submerges the single spool slowly draws nearer to the axis of the big wheel, stretching the tube. When the tube is submerged to greatest depth, the spools are at their greatest distance, and the tube is stretched far beyond the conditions of ordinary service. An inspector observes and marks any leaky tube for rejection.

part are buying only their normal requirements, making no attempt to extend commitments any longer than necessary.

President R. D. McDowell, of the India Machine & Rubber Mold Co., Akron, Ohio, reports that business in the new 18 and 19-inch core and chuck is exceeding expectations. The number sold indicates that manufacturers are preparing to supply the coming demand for replacement of the new 27 by 4.40 tire sizes. The early demand came only from the original equipment tire manufacturers.

An attempt to organize the more than 40,000 employes of the Akron rubber factories is being made by a newly formed "rubber workers' union." The manufacturers apparently have paid little attention to this movement, as it is said that the leaders are disgruntled former workers who are seeking to further their own interests. Announced aims of the rubber workers' organization are: "A minimum wage of $40 a week, equal pay for men and women and young workers for the same work; eight-hour day, 40 hour week, no speeding up of operations, guaranteed full year work, and the right of organization. There are 81,670 tire and tube workers in the entire country, of which 43,391 work in the factories of Akron, or 53 per cent of the industry.

The Firestone Tire & Rubber Co. announces the starting of additions to its Akron plant. Plans have been drawn for a new wing to Plant 2, for the purpose of increasing production on small size tires. It will be 180 feet long, 60 feet wide, and four stories in height. Plant 2, built in 1917 for the manufacture of Ford size tires, has a capacity of 20,000 tires and tubes daily. High pressure tires, balloons, and drop center rim balloons are produced. The addition will increase capacity about 20 per cent.

Construction of four buildings, with a total floor space of 384,000 square feet, has been started by the Goodyear Tire & Rubber Co., at Akron, Ohio. All will be used for warehouse purposes. Two will be five stories in height and the others three stories. Goodyear officials say the increased warehouse facilities will enable production to be increased at the Akron plant by releasing space now used for this purpose.

The India Tire & Rubber Co., Akron, Ohio, has begun the erection of a new warehouse at its Mogadore plant. According to J. M. Alderfer, president of the organization, the factory is now at peak production, sales have been good throughout the year, and there is every reason to believe that they will continue to grow during the remaining months.

The Rubber Service Laboratories Co., Akron, Ohio, announces that Arnold H. Smith has been appointed assistant sales manager, responsible to E. J. Smail, Jr., vice president in charge of sales. P. M. Aultman, formerly chief chemist of the Republic Rubber Co., has joined the staff of the Rubber Service organization, and is now in charge of the compounding laboratory.

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part are buying only their normal requirements, making no attempt to extend commitments any longer than necessary.

President R. D. McDowell, of the India Machine & Rubber Mold Co., Akron, Ohio, reports that business in the new 18 and 19-inch core and chuck is exceeding expectations. The number sold indicates that manufacturers are preparing to supply the coming demand for replacement of the new 27 by 4.40 tire sizes. The early demand came only from the original equipment tire manufacturers.

An attempt to organize the more than 40,000 employes of the Akron rubber factories is being made by a newly formed "rubber workers' union." The manufacturers apparently have paid little attention to this movement, as it is said that the leaders are disgruntled former workers who are seeking to further their own interests. Announced aims of the rubber workers' organization are: "A minimum wage of $40 a week, equal pay for men and women and young workers for the same work; eight-hour day, 40 hour week, no speeding up of operations, guaranteed full year work, and the right of organization. There are 81,670 tire and tube workers in the entire country, of which 43,391 work in the factories of Akron, or 53 per cent of the industry.

The Firestone Tire & Rubber Co. announces the starting of additions to its Akron plant. Plans have been drawn for a new wing to Plant 2, for the purpose of increasing production on small size tires. It will be 180 feet long, 60 feet wide, and four stories in height. Plant 2, built in 1917 for the manufacture of Ford size tires, has a capacity of 20,000 tires and tubes daily. High pressure tires, balloons, and drop center rim balloons are produced. The addition will increase capacity about 20 per cent.

Construction of four buildings, with a total floor space of 384,000 square feet, has been started by the Goodyear Tire & Rubber Co., at Akron, Ohio. All will be used for warehouse purposes. Two will be five stories in height and the others three stories. Goodyear officials say the increased warehouse facilities will enable production to be increased at the Akron plant by releasing space now used for this purpose.

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threaded rubber products. According to H. P. Lawson, district manager, whose headquarters are in Portland, and whose field covers Oregon, Washington, Idaho, Utah, Nevada, and Wyoming, the increase for the 1926 fiscal year has been 40 per cent over the 1925 figure.

A San Francisco branch at 341 Larkin street, in charge of J. A. Cortwright,, had been opened by the E. M. Smith Co., Los Angeles, California, makers of brake lining and mechanical rubber goods.

The Coast Tire & Rubber Co., Oakland, California, has secured several more tire contracts for original equipment and the average daily production will be increased from 400 to 800.

Frank L. Ryan, Pacific Coast manager, 455 Second street, San Francisco, California, reports a marked growth in sales of India tires recently. He gives much credit to his codistributers, notably Nelson & Price, Inc., of Los Angeles, California, which concern during the first six months of 1926 sold $1,680,000 worth of tires and has just contracted for $1,500,000 more in a single order. Frank T. Price is president and general manager of the concern.

Plans are being made to establish a San Francisco branch of the Paragon Rubber Corp., Los Angeles, California, according to President H. G. Coggswell, who also reports a steadily increasing sale of general mechanical goods. Another product being introduced is the National cushion tire.

The Columbia Tire Corp., Portland, Oregon, reports a broad sales demand and excellent distribution throughout the entire Pacific Coast territory. Products are chiefly C-T-C balloons and Pan-Pacific cords.

The newly-organized Southern California Tire Dealers' Association, with headquarters in Los Angeles, California, reports total membership of almost 200. The officers are: A. H. Rude, president; L. W. Fitzgerald, vice president; C. H. Rapp, secretary; N. Bershon, treasurer. Directors are: W. R. Cain, Frank Dillon, W. F. Hackett, H. H. Quinby, Vincent Loos, Bob Robertson, and H. E. Fisher. The principal object of the association is to protect the public against gyp retreaded tires.

C. J. Evans, general manager of the Cactus Manufacturing Co., Los Angeles, California, specializing in rubber tire boots and patches, who was in New York arranging for larger eastern warehouse facilities, also visited the new Cactus branch factory in Cincinnati.

Mid-October daily production at the Goodyear Tire & Rubber Co.'s Los Angeles plant averaged 6,600 casings and 6,500 tubes. The factory is now turning out slightly over 50 per cent in balloon tires, as compared with 40 per cent six months ago, and but 30 per cent a year ago. Estimates are that within a year only one tire in five will be a high-pressure cord. Harry E. Blythe, vice president and general superintendent, has returned from his trip abroad having visited the largest rubber factories in Europe. John W. Mapel, president, E. L. Falls, in charge of sales, and P. J. Cox, in charge of repair materials, visited the Goodyear plant in Akron.

The Spreckels "Savage" Tire Co.'s plant in San Diego is still on the market, awaiting a bid satisfactory to the executors of the estate of the late John D. Spreckels, who practically owned the plant. The factory will remain closed until a sale is made. Meanwhile tire stocks in various parts of the Pacific Coast territory are being disposed of in bulk lots, one parcel of eight carloads having just been bought by George D. Wheeler of Kansas City, Missouri, for disposal in the Los Angeles metropolitan area.

The first plant unit of Rubber Products of America, Bates City, near Hermosa Beach, California, is completed, and will be in operation January 1. The company will manufacture articles of desulphurized rubber, recompounded, and also sell reclaimed rubber produced under the Willard devulcanizing patents. Offices are at 117 West Ninth street, Los Angeles, California. W. H. Yetman is president; C. R. Jamison, vice president; W. H. Taggart, secretary; Frank A. Guernsey, treasurer; who with O. T. Ross, comprise the directorate of five. E. T. Climes, formerly with Firestone and Goodyear, is superintendent.

J. B. Magee, manager of the Los Angeles branch of the United States Rubber Co., has been studying trade conditions on the Pacific Coast as far north as Vancouver, British Columbia.

For the purpose of serving its distributers in Arizona, the General Tire & Rubber Co., Akron, Ohio, has opened a factory warehouse at Phoenix, Arizona, with Donald Hultz in charge. The company's San Francisco branch is being served by D. A. Kimball, who has been appointed district manager.

Gates Rubber Co. Opens New Depots

In order to take care of its increasing business, the Gates Rubber Co., Denver, Colorado, has established two new warehouses at Seattle, Washington, and Phoenix, Arizona. These two additional depots will serve as distributing points for Gates tires in Oregon, Washington, Idaho, New Mexico, Arizona and Colorado, five of such establishments having been organized this year. Other principal warehouses are at Chicago, Denver, Dallas, El Paso, Salt Lake City, Kansas City, Los Angeles, and Portland, while eight other depots are located in smaller cities.

Canada

Confidence has been restored to business following the Federal Elections. A majority government is essential to the country. General prosperity is indicated by the following outstanding facts:

Average prices of all industrial products are 50 per cent above pre-war. Producing capacity of all industrial plants has been steady and promises good business for fall and winter months. There is no great business boom, but in the automotive field a substantial increase in sales shows that the purchasing power of the country is strong and healthy.

The new prices on garden hose for the 1927 season show a substantial price reduction. Business in many communities during the past season was considerably below the previous year, and some dealers have been obliged to carry over considerable stock, which will represent a loss at the present lower quotations. Some weeks ago new and lower prices were quoted on all mechanical rubber goods and on automobile tires, so that the revised quotations on hose will be quite in line with the reductions already announced on other rubber commodities. The change in lawn and garden hose for spring represents a decline of almost 15 per cent on wrapped, and about 5 per cent on molded hose. In announcing new prices it is stated that orders at these prices will be accepted up to and including December 15, and if delivery is accepted prior to May 31, 1927, a special discount of 5 per cent will apply to such orders.

The new tennis list is out. It shows very little change as compared with last year. There is nothing worth while to report about rubbers. The majority of fall deliveries have been made to the retailers, but the latter have not yet been able to make an inroad on their stocks. But they should do so very shortly. Clear skies and sunshine cannot last forever, and no doubt we shall have plenty of rainy days and muddy roads in the not far distant future.

Few conveyances have attracted as much attention as the modern caravan used by B. G. Work, president of The B. F. Goodrich Co., Akron, Ohio, during his tour through Canada this year. The first car was entirely devoted to a living room, richly carpeted, curtained, with walls and ceilings of beautifully finished woodwork inset with mirrors. It was furnished with a piano, radio, phonograph, easy chairs and a splendid lighting system. The second car of equal size was divided into compartments comprising a kitchen-

ette, a small hallway and bedroom containing four berths and a bath.

T. Y. O'Neill, sales manager of the Miner Rubber Co., Ltd., Montreal, has been on a most successful trip through Western Canada.

J. Myles, Columbus Rubber Co., Montreal, Ltd., is making a trip through the Prairie Provinces, calling on the various points of importance, including Calgary, Edmonton, and Winnipeg.

The Goodyear Cotton Co.'s new cotton mill at St. Hyacinthe, Quebec, is not the smallest cotton mill in Canada by any means. To give an idea of the amount of fabric of all kinds it is capable of turning out in a year The Goodyear Tire & Rubber Co. of Canada, Ltd., New Toronto, quotes the following figures: In one year they make 28,756,884 miles of single strand yarn; 2,543,724 miles of cord; 2,682,240 yards of fabric 60 inches wide. Yet the mill does not have sufficient space or equipment to make all of the fabric and cord used in Goodyear's Canadian factories.

The humble bicycle is holding its own in Canada. In 1925, Canadian bicycle factories increased output by 19 per cent over 1924, to the value of $1,445,901. There has been a steady growth in this industry in the Dominion since 1921, when the value of Canada's bicycle output was $708,805. The five Canadian firms engaged in this industry are located in the Province of Ontario.

D. E. Rogerson of the Dunlop Tire & Rubber Goods Co., Ltd., Toronto, was recently elected executive of the Canadian Bicycle Dealers' Association.

The Quebec Rubber Co., Ltd., Quebec City, has lately issued a very attractive two-color card announcing King Cord, Quebec Balloon, and Quebec Airless tires. A new store has been opened at 256 King street for the sale of these products.

A new feature shown on some Fleet Foot shoes for 1927 is a compounded rubber sole named "RE-LY-ON Sole." The Dominion Rubber Co., Ltd., Montreal, is showing an extensive line of tennis and outing shoes with crêpe and RE-LY-ON soles.

While there is possibility of an increase in rubber production under American auspices, it will only be a small part of what the United States needs, is the opinion of Dr. G. S. Whitby, professor of organic chemistry at McGill University, Montreal, who attended the crude rubber symposium of the American Chemical Society meeting at Philadelphia. "The most interesting feature in connection with the symposium," Dr. Whitby said, "was the disclosure for the first time of results of 12 years' research work in connection with the guayule rubber plant carried out in Southern California by W. B. McCallum, a botanist and old McGill graduate.

W. S. Musgrave, the genial manager of the Goodyear Tire & Rubber Co.'s Toronto branch, recently entertained his entire operating staff at Shoreacres Golf Club, on the shores of Lake Ontario. Keenly contested golf, softball and other contests were staged, after which a full-course dinner was served. A pleasant conclusion was an evening of dancing.

The Dominion Rubber Co., Ltd., Montreal, has issued a splendid series of Fleetfoot footwear show or counter cards, which have been sent to the trade throughout the Dominion.

E. R. Waite, formerly in charge of the compounding laboratory of The Rubber Service Laboratories Co., 611 Peoples Savings & Trust Building, Akron, Ohio, is now covering the Ohio and Canadian territories for the Rubber Service organization.

Changes in Miner Rubber Co.'s Sales Staff

J. A. McLeod is now representing the Miner Rubber Co., Ltd., Montreal, in the territory from Toronto to Kingston, succeeding E. A. Callighen, who has been promoted to a staff position in the company's Toronto office. Herb Trimble succeeds the late Tom Clifford. The territory Mr. Trimble formerly covered in Western Ontario will be taken care of by other members of the staff. The ground from Goderich to Stratford will be looked after, and as far north as Northampton will be handled by Mr. Yearsley of the London, Ontario, branch. The territory from Toronto to Wiarton and Orillia will receive the attention of Jack Gray. W. E. Stevens will call on the trade in the Guelph, Kitchener, section, and H. G. Arnold's territory will in the future extend north from Orillia.

Canadian Exports of Rubber Footwear

The affiliated factories of the Dominion Rubber Co., Montreal, account for the greater part of the rubber footwear exported from Canada. There are, however, several other organizations in the country engaged more or less in this trade, while several of the American rubber footwear factories have branch plants in Canada. The British preferential tariff is still maintained, although the predominance of Canadian exports to English possessions is not as noticeable as formerly. Canadian exports of rubber boots and shoes have been estimated as follows: 1922, 1,469,000 pairs; 1923, 2,125,000 pairs; 1924, 3,059,000 pairs; and 1925, 4,431,000 pairs.

R. A. Gunther

W. W. Atkinson

F. H. Stafford

The expansion of the business of the Canadian Goodrich Co., Ltd., Kitchener, Canada, has necessitated the following changes in branch personnel: R. A. Gunther, formerly branch manager at Toronto, has been placed in charge of the Montreal branch, his successor at Toronto being W. W. Atkinson; F. H. Stafford, formerly branch manager at Montreal, has been transferred as special sales representative to Kitchener.

The Rubber Trade in Europe

Great Britain

ALTHOUGH the long-continued coal strike is causing much suffering, particularly with winter approaching, Great Britain is nevertheless finding an improvement in industrial conditions, and the country is said to be gradually working its way back to its pre-war position in finance, trade and shipping.

In this industrial advance the rubber trade is attracting much attention, while there are all kinds of speculations as to the course the Colonial Office will take in the matter of revising rubber export regulations. It has been proved that the present maximum allowance is beyond the capacity of a great number of rubber producers, and that the official estimate of production has been on too generous a scale. Meanwhile the knowledge that there is a large accumulation of unused coupons, with some unscrupulous marketing of them, is arousing much discussion, with a demand for reliable statistics. It is stated, however, that the Colonial Office has called upon estate companies for a return of their productions for the first six months of the present year. If the majority of them are unable to show their ability to produce the full standard quantity, it can be fairly assumed that the Government may adopt some more drastic method of assessing estates according to capacity.

Pivotal Price Raised

The rubber industry in general was deeply interested in the announcement made on October 24 concerning the British Government regulations for the control of crude rubber exports from the Far East. Under the new provisions for the quarter commencing November 1, exports from Malaya proper and from adjacent territories under British protectorate, now 100 per cent of production, will be reduced to 80 per cent for the restriction quarter, November 1 to January 31, because the average price in London for the present last quarter has failed to reach the pivotal point of 21 pence per pound.

A new pivotal price of 24 pence has also been set for the second restriction quarter beginning February 1, 1927. If the London average price for the first quarter is under 24 pence per pound, but not below 21 pence, no change will be made in the exportable allowance of 80 per cent. In the event that the price average for the first quarter falls below 21 pence, but not under 15 pence, exports will be reduced 10 per cent to 70 per cent.

In the event that exports were 100 per cent of production, the reduction based on these price averages would be 20 per cent for the next quarter.

Press reports further state that there has been no interference with unused coupons in the hands of producers, these coupons representing an additional total of 40,000 tons, which it is believed will counteract a 20 per cent reduction in the exportable allowance for another six months.

New President of Rubber Institution

It is announced that Lord Colwyn has consented to act during the coming year as president of the Institution of the Rubber Industry, the fourth executive to serve in that capacity. His predecessors were: J. H. C. Brooking, upon whom devolved especially difficult work in connection with the establishment of the organization; Alexander Johnston, whose period as president lasted for two years, during which the membership of the Institution rose to over 600, and the diploma scheme was inaugurated; and Sir Stanley Bois, who for the past two years has most successfully held office, the Institution membership again being doubled, partly as the result of the incorporation of the Rubber Shareholders' Association.

The new president was already associated with the Institution as one of its vice presidents, while he holds a high place in the rubber industry through his personal connection with the long-established organization of Charles Macintosh & Co., Ltd., and from the fact of his being one of the directors of the Dunlop Rubber Co., Ltd. In other and larger fields he has shown a natural aptitude for handling important public affairs, he having held such offices as High Sheriff of Carnarvonshire, and Chairman of the Income Tax Commission.

Rubber From Euphorbia?

More or less exaggerated statements are coming from South Africa regarding large plantations in that country where Euphorbia trees are said to be yielding profitable amounts of rubber latex. One of these reports mentions 60,000,000 Euphorbia trees, the claim being that they are yielding a rubber equal to Pará, while vulcanization is said to be excellent. Although previous attempts to secure rubber from Euphorbia have been entirely unsuccessful, a factory for this purpose has been established at Durban and is about to begin work, while another is being erected at East London. It is reported that concessions are being acquired over all the Euphorbia-growing lands in the Bathurst district and along the coast to Natal and Zululand, and even to Portuguese Africa.

Investigations made by the Imperial Institute in 1912 resulted in the conclusions that the samples of Euphorbia rubber are of resinous character. The substance returned as caoutchouc in the analytical results possessed none of the properties of true rubber. These products resemble the Almeidina of commerce and could probably be used for the same purpose. (The value at the time was about 50 shillings a ton.)

British to Manufacture Tires in Australia

Press reports state that the Rapson Tire & Rubber Co. of Australia, Ltd., capitalized at £500,000, is being organized for the purpose of manufacturing tires in Tasmania, where a factory is to be established with Sydney as the distributing center. In the formation of this company all the patents, manufacturing processes and rights of the British Rapson organization have been acquired, while agreements have been made with distributers throughout Australia to handle 90 per cent of the factory output of 3,500 tires weekly. The plant is said to have been established in Tasmania because the climate is similar to that of London, and because the Tasmania State hydroelectric undertaking will supply cheap electric power. The latest types of machinery will be used in the plant equipment, much of it having been bought in the United States.

British Notes

The Dunlop Rubber Co. (Uruguay), Ltd., has been capitalized at £20,000, for the purpose of carrying on in Great Britain or elsewhere the manufacture and sale of india rubber, gutta percha, balata, webbing, canvas, and any substitutes therefor, as well as the production of tires and wheels, and the planting and cultivation of rubber. The company's offices are at 38 Osnaburg street, N. W. 1, London.

Induced by the protective tariff of Australia, A. G. Spaulding & Bros., sporting goods manufacturers, have opened a factory at Sunshine, Victoria. The new division, which will carry on business under the name of A. G. Spaulding & Bros. (Australasia) Pty., Ltd., is representative of an establishment which maintains factories in England, France, Canada, and the United States. At the new and well-equipped plant tennis balls will be one of the leading products, while space is being reserved for a golf ball department.

France

Manufacture Génerale de Recaoutchoutage de Pneumatiques par the Procédés Resurrex has recently been formed to manufacture and sell all apparatus for retreading tires. The concern which has headquarters at 4 rue Doudeauville, Paris, is capitalized at 700,000 francs.

Etablissements Bertholier, Paillier et Bergin, Paris, will manufacture and sell rubber goods and accessories for bicycles and automobiles.

Germany

The Leipzig Fair

For the last few seasons, the Leipzig Fair has been quiet. The fall fair which has just taken place was, if anything, just a little quieter than usual. Several important rubber firms were not represented and will probably not be present at future fairs. Business in staple articles has been found generally poor, and prices in certain lines being particularly unfavorable. On the other hand surgical goods and seamless articles were in satisfactory demand.

Specialties and Novelties

Among the many novelties shown were most realistic Berlin pancakes on top of which was natural sugar. When the pancakes were picked up, they emitted a squeaking sound. The firm of Weiss & Baessler, A. G. Leipzig, was responsible for this novelty which completes their line of rubber toys including bananas, birds and the like. The firm of Zieger & Wiegand had a woman fruit-peddler in their booth who offered for sale rubber oranges, lemons, etc. The Gummi-Waren-Fabrik Saul G. m. b. H., Aachen, introduced a new ball with automatic closing. They have a diameter of 23 cm. (9 inches) and have sections colored green and white, red and white and blue and white. A very attractive novelty was shown by the Mittelland-Gummiwerke A.-G., Hannover. After difficult manufacturing tests, this firm has succeeded in producing a flesh-colored kneadable mass which is so formed and painted by artists that the finished articles look as though they came from the hand of a sculptor. The articles include dolls, etc., and the figures can be made to assume any posture. The Continental Company has produced a sheet rubber chess board that can be folded into the smallest space and, therefore, should prove invaluable when traveling. The O. Reipert concern of Erfurt has some improvements in its well-known wringing-machine. Arthur Frankenstein, Beuthen, Oberschlesien, has perfected a new respirator of Excelsior sponge rubber, which effectively closes the mouth and nose thereby preventing the inhaling of dust. The respirator should prove particularly useful for workers in chemical factories and the like.

Most comical inflatable rubber animals mounted on wheels and furnished with springs to be wound up are novelties just put on the market by Gebruder Feisenbarger, Frankfurt, a. M.

A rubber gymnasium mat has recently been devised and is now being tried out, which is made of cellular or foam rubber covered with strong rubberized drill. The cover is combined with the filling by vulcanization.

Rubber Wallpaper

At the Dusseldorf Exposition, called for short the "Gesolei," (formed from the initial letters of the rather long German name) the Salubra A.-G. of Grenzbach, Baden, showed its specialty, rubberized, washable wall paper. This product is considered equal to other wall papers in appearance and superior in durability. It is produced in a great variety of designs and colors and comes on the market under the name "Tekko" and "Salubra." This material, which looks like wall paper and not like oil cloth or linoleum, can be washed and disinfected as often as necessary without deterioration, which renders it particularly suitable for use in hospitals, hotels, public buildings, summer houses, and country residences.

Scientists Form Rubber Association

Notice has been received of the formation on September 25, 1926, of the "Deutsche Kautschuk Gesellschaft," an association of chemists and engineers employed in the German rubber industry. The aim of the organization is to assist rubber research and the manufacture of rubber as far as possible. The executives are: Dr. R. Derenbach, Cologne; Dr. Baumann, Frankfurt; Dr. U. Voss, Hannover; Dr. Kindscher, Berlin; Dr. L. Hock, Giessen; Dr. F. Kirschof, Hamburg; Dr. St. Reiner, Duisburg; and H. Pahl, engineer, Dusseldorf.

Dr. E. A. Hauser, Frankfurt, a. Main, is manager for the Association.

Sweden

The manufacture of rubber footwear is Sweden's most important line of rubber goods and dates from the seventies. The manufacturers are combined in a selling organization, the Svenska Galoshchforsaljnings A. B., which was formed in 1909, and affords practically a monopoly on the home market. The production of rubber shoes in Sweden grew steadily, the output in 1913 being 3,541,661 pairs, value 6,879,902 crowns ($0.2680 par value), and 4,743,299 pairs, value 22,115,911 crowns in 1924.

The four factories which produce rubber footwear have a joint capitalization of 17,930,000 crowns and employ some 2,300 workers.

Imports of rubber footwear are only about 5 to 6 per cent of the quantity produced locally, but they are growing chiefly due to the demand for bathing shoes and rubber boots, which apparently are not yet made in Sweden. Most of this kind of footwear comes from America, but foreign firms, chiefly German, quickly copy American styles and offer these imitations at prices about 50 per cent lower than American goods.

During the first half of 1926 footwear imports were 77,762 kilos against 71,575 kilos in 1925. Exports were 72,881 kilos in the first half of 1926 against 48,153 kilos in 1925.

The monopoly of the Swedish manufactures, who have made enormous profits due to overcharging local consumers, is threatened by a cooperative society which has announced its intention of opening an independent shoe factory. This announcement has led the manufacturers to cut their prices by approximately 50 cents per pair, so that men's rubbers now retail at about $1.75 and women's at about $1.50.

The Trelleborgs Gummifabriks Aktiebolag, Trelleborg, Sweden, specializes in technical rubber goods of all kinds as hose, molded articles, rolls for paper mills, etc. In addition, the factory produces automobile and bicycle tires, ebonite, and rubber soles and heels. The last three items, ebonite, heels and soles, constitute the firm's chief articles of export. As a side line the company also operates a raincoat factory, the output of which is sold only in Sweden.

SOVIET PRIZES FOR SYNTHETIC RUBBER

Two prizes are being offered by the Soviet Government in connection with practical processes for the manufacture of synthetic rubber, the first of these awards to be 100,000 rubles and the second 50,000 rubles. The competition is open to all individuals, whether domiciled within the Union of Soviet Republics or abroad, and to all institutions, companies, or other organizations within the Union. The raw materials must be found in Russia. Those wishing further information should communicate before January 1, 1928, with the Technical-Scientific Section of the Supreme Council of Public Economy (Room 7), Moscow, Russia.

The Rubber Trade in the Far East

Malaya

THE *Malayan Tin and Rubber Journal* has always visualized the possibility of heavy damages if not disaster to the rubber industry caused by an epidemic of one or other of the known diseases which rubber is subject to or to some disease unknown as yet, and has consistently disseminated its views on the subject. It has apparently taken to heart the lessons learned from the ruin of the coffee planting industry in Ceylon and Malaya. This being the case, the Annual Report of the Acting Secretary for Agriculture, Straits Settlements and Federated Malay States, 1925, naturally comes in for special consideration and since several points brought up should be of importance also to manufacturers, these are here taken up, too.

The report was published by Major B. J. Eaton, at the time Acting Secretary for Agriculture, a man with long experience of rubber in Malaya.

Considering tapping first, we find conservative tapping systems the rule on the larger estates, the systems generally being alternate or periodical tapping. It is now evidently recognized that lighter tapping methods preserve the health and disease-resisting powers of the tree, a point which our contemporary, with an eye to possible dangers from disease, considers vital.

The paper finds the question of cultivation and manuring not of much importance for average rubber land here but would like to see the Department of Agriculture plant up rubber on some reslimed area behind a bucket dredge and there experiment with the cheaper forms of manuring.

Apparently there is great difference of opinion on the subject of ferns growing on rubber land. In many instances experience would show that these did no harm.

The longevity of rubber is a much discussed point. According to Major Eaton, the chief factor which fixes the economic life of the rubber tree is disease, particularly root diseases which may have existed for some years without discovery or treatment. The most familiar diseases in Malaya are: Pink disease, which is encouraged by moisture and exposure and causes most damage to young trees. This disease fortunately has not increased to any extent of late. Another important disease here is mould rot. This is receiving careful treatment, but new centers of infection were reported last year.

Talking of root diseases, Major Eaton states that interesting and valuable observations have been made by the mycologist in connection with wet rot, caused by *Fomes pseudo ferreus*, which is believed by many to be probably the chief limiting factor affecting the longevity of Hevea.

In another place, Major Eaton states that continued investigations into the effect of the addition of alkaloids to rubber have led to interesting results as to the effect of emetine and ipecacuanha roots in accelerating the rate of cure of rubber. Investigations regarding the effect of mechanical impurities, in soil particles, bark, etc., on the tensile strength and the breaking strains show that these do not influence the latter, though in some cases tensile strength is decreased.

By an oversight the carryover of amounts exportable from Malaya in July was stated in these columns last month as being 25,649 tons for the Federated Malay States, 6,065 tons for the Straits Settlements, 9,819 tons Johore and 1,847 tons Kelantan, in all 43,380 tons, after the exports for the month had been deducted. The amounts, of course, refer to the balance before July shipments were made, the actual total balance remaining to be carried over to the next month, August, after subtracting July exports having been 23,099 tons, not including figures for the departments of Kedah and Trengganu, which are not yet available.

Ceylon

Ceylon exports of home-grown rubber during August, 1926, amounted to 5,666 tons against 3,730 tons in August, 1925. As the exportable maximum was 5,873 tons for August, the amount exported was not far below the quota.

Up to the present Ceylon's carryover amounts to some 16,000 tons, a state of affairs that is causing much uneasiness. A good deal of controversial discussion has been called forth by suggestions in certain quarters that all unused coupons up to a stated date should be canceled.

Netherlands East Indies

Ever since it was recognized that native rubber was a factor to be reckoned with, the question as to what effect on market conditions this product would have has been widely discussed. Two opposing views are most frequently heard; on the one hand the opinion is that native output would show huge increases when market prices went up but would drop to a minimum when prices were low. This conclusion is primarily based on the assumption that rubber production is merely a side-line with the native who, therefore, does not depend upon the output to cover his needs and can, consequently, with an easy conscience abandon it when prices are not considered remunerative enough. In other words, native rubber, because it would be thrown on the market in large quantities when prices were high, would prevent undue soaring of prices; while on the other hand, because these large amounts would be suddenly withdrawn from the market when prices dropped below a certain level, slump conditions would be avoided; that is, native rubber is expected to act as a stabilizer to the market.

The second view is, that far from stopping suddenly when prices are low from a European point of view, natives can and will go on producing to capacity long after this low level has been reached. Now as the market has dropped considerably since last year, an examination of export figures should be an aid in settling this question.

Figures of exports from Netherlands East Indies for the first half of 1926 are now available and may be compared with those for the first half of 1925:

	First half of	
	1925	1926
	Tons	Tons
Java and Madura	23,427	28,205
East Coast Sumatra:		
Estate Rubber	22,790	26,809
Native rubber	7,500	6,990
Riouw	3,964	3,826
Djambi	14,420	12,257
Palembang	8,627	7,811
Benkoelen	273	113
West Coast Sumatra	1,400	849
Banka and Billiton	983	832
South and East Borneo	11,914	11,378
Western Borneo	10,219	9,302
Celebes	73	93
Total	105,590	108,465

The above figures, analyzed, show an increase in exports from estates in Java and Sumatra, but a decrease from practically all the other districts which mainly export native rubber. The decrease however is not very large, but still sufficient to lead persons to the conclusion that those who believe that a drop in prices is followed by a decrease in native output, have gaged the matter correctly.

However, this is only apparently true. An examination of the facts shows that native output made its greatest strides during 1923 and 1924 when prices were not particularly tempting, and that native exports were on the downward path when prices recently were at their peak. This has not escaped notice, and has been read to mean that native trees had been so badly manhandled during the few years preceding, that a considerable number had become unproductive, temporarily at least, and the rapid deduction followed, that no increases need be looked for in the near future even should prices go up again.

Once more, this is not the whole truth of the matter. A factor that has been very frequently overlooked is the temperament of the natives in these parts. When prices are high and money comes easily, the native is generally soon satisfied and spends not only a lot of money but a lot of time in celebrating. And of course when he is celebrating, he is not tapping. This is a condition which is likely to continue to a varying extent, so long as prices are profitable.

But here again deductions must be made cautiously, for the boom has introduced new elements, and conditions will never be the same as before the boom, so far as the native is concerned. In the first place the native's standard of living has been changed. High wages and big profits have introduced him to new luxuries, automobile rides and even automobiles, bicycles, improved housing and European clothes and probably most important of all—imported foodstuffs.

Hitherto, the native as a whole could maintain a certain independence where rubber was concerned and tap or not as he chose for he produced most, if not all his food himself. But he has abandoned his rice fields and other food crops for rubber, at least to a very great extent, and has been falling back on rubber alone to support him. Now should rubber drop still further, or even stay at the present level and the native not be moved to return to his rice-fields—government intervention might be necessary. It is to be expected that once most of the easily earned money has been spent, he will take up tapping with renewed vigor even if, or rather just because, the price is low, for not only must he pay more for his imported foodstuffs, but at least some of the luxuries will have become near necessities to him, which have to be paid for by hard work.

Another factor, quite as important as the development of the native as a money-maker and money-spender, is the awakening of Dutch capitalists to the profit to be made from remilling native rubber on the one hand and to a tendency, which may grow to significant proportions, to buy latex for the spraying installations from the natives on the other. With such stimuli backing up the force of circumstances (when prices drop further) there is no telling where the growth of native production may end.

In connection with the above the following average prices in the native areas should prove interesting. The prices are in guilders (about $0.40) per pical (133⅓ pounds):

				1926			
	1923	1924	1925	Jan.	Feb.	Mar.	April
East Coast:							
Sumatra	....	....	122.73	146.00	130.75	134.34	121.41
Djambi	42.87	....	109.33	.....	.....	.....	.....
Palembang	54.69	46.24	104.90	130.00	89.75	104.00	.....
Billiton	....	....	.....	90.00	145.00	142.50	97.50
Riouw	54.92	41.87	120.78	95.00	103.08	97.50	101.75
Borneo	53.83	51.25	114.25	112.00	115.10	107.58	97.14

While the prices during January, February and March of 1926 are quite evidently higher than the average for 1925, and certainly were considerably above those in the corresponding months of 1925, exports to Malaya during the first six months of both years were:

	1925	1926
January	10,130	10,237
February	10,069	8,306
March	13,397	14,800
April	11,749	10,565
May	12,979	10,604
June	14,706	11,763

This seems to prove conclusively that the facile formula: high prices big native outputs; low prices lowered native outputs, does not work as well as it should.

Netherlands East Indies Notes

The Sumatra Land Syndicate, a subsidiary of the Anglo-Dutch Planatations of Java, which exploits extensive plantations in the vicinity of the Ranau Lake, is reported to have acquired from the United States Rubber Co. a license for producing sprayed rubber in South Sumatra. The concern intends to buy up native latex also in Palembang and if possible in Djambi for sprayed rubber.

Exports of latex from East Coast of Sumatra during the first half of 1926 were only 120,170 kilos against 3,097,172 kilos in 1925.

Dr. J. G. J. A. Maas, head of the Agricultural Department of the experiment station of the A. V. R. O. S. (General Association of Rubber Planters, East Coast Sumatra), Medan, has been appointed superintendent of the Government Rubber Industry, Buitenzorg, Java. Dr. Maas joined the Sumatra experiment station in 1917 when it had been newly established and has since then done much valuable work there. His acceptance of the appointment means a loss to the experiment stations that will be keenly felt.

From the prospectus of the Netherlands Rubber Union, we learn that the concern expects to receive permits for treating about 27,000 tons of native rubber per annum.

Cost of preparation, including all overhead, is calculated at 3 guilder cents per half kilo (about one cent, American currency, per pound), f.o.b., not including packing.

Costs for building, installing and completely equipping the factories, including necessary transportation facilities by land and water, are calculated at about 550,000 to 700,000 guilders per factory according to local circumstances. The Palembang factory is expected to start operating early in 1927. The margin of profit is figured at 3-5 per cent so that gross profits (on the 3 per cent basis) on sales of 20,000 tons dry rubber at one guilder per half kilo (about $0.40 per 1.1 pounds) would come to 1,200,000 guilders. In order to provide funds for operating, shares for 2,000,000 guilders have just been issued.

The Government Gutta Percha Estates in 1925 covered an area of 1,432 hectares (hectare=2.45 acres), the product of which was 100,433 kilos against 108,513 kilos in 1924. The demand for Tjipetir gutta continued good in 1925 and the price obtained was 6.15 guilders per kilo against 5.65 guilders in the preceding year.

Interest in remilling of native rubber still continues. Recently the Internationale Crediet-en-Handelsvereeniging "Rotterdam," through M. P. Tielens, applied for permission to erect a factory, with annual capacity of 6,000 tons dry rubber in Palembang. In addition F. Möding, acting for the Sumatra Industrie en Handels Mij asked for a permit to erect a factory, with capacity of 600 tons of dry rubber in the Ogan Ilir subdivision of the Palembang Lower Lands.

THE FOUR LARGEST RUBBER PLANTATIONS IN MINDANAO, Philippine Islands, are: the Lais Trading & Development Co., Lais, Malita, Davao; the Rio Grande Rubber Estate, Kabakan, Cotobato; the Basilan Plantation Co., Isabela de Basilan, Zamboanga; and the American Rubber Co., Latuan, Isabela de Basilan, Zamboanga.

BOLIVIA'S SHIPMENTS OF CRUDE RUBBER DURING 1925 ARE AS follows: rubber (fine), 2,537,808 kilos, value $2,049,892; while export duties collected were $160,916. For the same period shipments of rubber classified as "ordinary" reached 854,946 kilos, value $446,057, with export duties estimated at $31,496.

Rubber Patents, Trade Marks and Designs

The United States

September 14, 1926*

1,599,602 Swimming belt. John M. Welch, Houston, Texas.
1,599,787 Nasal douche. Meyer Perkins, Brooklyn, New York.
1,599,846 Tire low pressure alarm. Isaac L. and Forrest J. Sinclair, both of Murphy, Oregon.
1,599,886 Rubber band receptacle. Elias Graham, Los Angeles, California.
1,599,898 Bathing cap. Charles Louis Kark, Racine, Wisconsin.
1,599,947 Toy snake. Charles E. Bishop, Springfield Township, Ohio.
1,599,988 Hair curler with elastic strap. Harry A. Cotton, Shreveport, Louisiana.
1,600,064 Mounting for abrasive wheels. George W. Perks, assignor by direct and mesne assignments to The George W. Perks Co., both of Akron, Ohio.
1,600,194 Toy cigar or cigarette. Thomas W. Miller, assignor to The Faultless Rubber Co., both of Ashland, Ohio.

September 21, 1926*

1,600,263 Life preserver. John H. Williams, Detroit, Michigan.
1,600,455 Flush tank valve with rubber lower portion. Theron Davis, assignor to The B. F. Goodrich Co., both of New York, N. Y.
1,600,500 Body contact device for chiropractic adjustment machines. Ernest H. Ashlock, assignor to William H. Sweetland, both of San Diego, California.
1,600,515 Sweeping compound. Genevieve L. Secoy, Charles City, Iowa.
1,600,676 Apparatus for molding conduits employing rubber core. Thomas E. Murray, Brooklyn, New York.
1,600,799 Protecting flap for pneumatic tires. Charles C. Clark, Washington, D. C.
1,600,908 Rubber repair material container. Ralph W. Sohl, assignor to The Goodyear Tire & Rubber Co., both of Akron, Ohio.

September 28, 1926*

1,600,989 Cushion tire construction. August J. Meyer, Chicago, Illinois.
1,601,000 Window well sealing sash. Emory Glenn Simoson, assignor to Fisher Body Corporation, both of Detroit, Michigan.
1,601,013 Self sealing inner tube. William W. Wildman, assignor to The Wildman Rubber Co., both of Bay City, Michigan.
1,601,484 Elastic fabric. Schuyler J. Taylor, assignor to The Russell Manufacturing Co., both of Middletown, Connecticut.
1,601,527 Vulcanizable covers for sidewalls of hand bag. Edward J. Godfrey, assignor to The Goodyear's Metallic Rubber Shoe Co., both of Naugatuck, Connecticut.
1,601,604 Tire deflation signal. Charles S. Reeder, Petrolia, Kansas.
1,601,700 Vacuum cushion insert for shoe treads. Samuel O. Morrison, Upper Darby, Pennsylvania.
1,601,708 Pedal pad. Walter H. Thomas, Spencer, Iowa.

October 5, 1926*

1,601,888 Milk bottle protector. Americo Sico, Boston, Massachusetts.
1,601,956 Rotary pulverizer lining. John R. Gammeter, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.
1,602,013 Catamenial shield. Frank Gottesman and Grace Walker, Atlanta, Georgia.
1,602,305 Bed cover holder. Erasmus Helm, Brooklyn, New York.
1,602,324 Shoe heel. Thomas W. Bigney, Philadelphia, Pennsylvania.

The Dominion of Canada

September 14, 1926

264,224 Lamp handle. Francis Clarence Kollath and Edward Martin Schoening, both of Chicago, Illinois, U. S. A.
264,303 Packing. The Garlock Packing Co., Palmyra, New York, assignee of Winfield Oscar Farrington, Los Angeles, California, both in U. S. A.
264,307 Transparent paper with rubber markings. The Lincoln Pulp & Paper Co., Ltd., Merritton, assignee of Kellogg Sinclair MacLachlan, St. Catharines, both in Ontario.
264,350 Automobile foot mat. Edward E. Richardson, Maumee, Ohio, U. S. A.

September 28, 1926

264,614 Fish creel. Stanislaw Szewczyck, Passaic, New Jersey, U. S. A.

October 5, 1926

264,840 Tire valve inside. A. Schrader's Son, Inc., New York, N. Y., assignee of Julius Volkhausen, Weehawken, New Jersey, both in U. S. A.
264,854 Insulated cable. The Western Electric Co., Inc., assignee of The International Western Electric Co., Inc., both of New York, N. Y., assignee of John Johnston, New Haven, Connecticut, all in U. S. A.

*Under Rule No. 167 of the United States Patent Office, the issue closes weekly on Thursday, and the patents of that issue bear date as of the fourth Tuesday thereafter.

The United Kingdom

September 1, 1926

254,344* Douche reservoir. J. Brandt, 8 Rue de Paradis, Paris, France.
254,371 Electric condensers. A. E. Watkins, 134, Olive Road, Cricklewood, London.
254,386 Hoof pad. G. B. Behrens, Vron Yw, and E. P. Davies, Llandyrnog, both in Denbigh.
254,401 Corona shield for dynamo electric machines. British Thomson-Houston Co., Ltd., Crown House, Aldwych, London, and F. P. Whitaker, 237, Clifton Road, Rugby, Warwickshire.
254,416 Paving blocks. W. J. Mellersh-Jackson, 28, Southampton Buildings, London (Wright Rubber Products Co., Racine, Wisconsin, U. S. A.).
254,420 Tire tread band. F. Marwick, 1427 Luzern street, Scranton, Pennsylvania, U. S. A.
254,468 Walking appliance. J. D. M. Robinson, Thomazines, Roydon, Essex.
254,506 Spectacle case with rubber fitting. J. W. O. Van Millingen, 20 Nicoll Road, Harlesden, London.
254,547 Printing machine with rubbered covered periphery. W. Hassler and C. Schirmeister, 7 Am See, Dresden, Germany.
254,556 Disk wheel with elastic tire. G. N. Artuso, 22, Lower Kennington Lane, and Dexine, Ltd., Abbey Lane, Stratford, both in London.
254,561 Brake drum ring. W. T. Groom, Central Garage, High street, Towcester, Northamptonshire.
254,573 Means for permitting inflation of tire while in motion. A. Pye, 5, Sidney street, and J. W. Talbot, 9 Sidney street, both in Western Point, Runcorn, Cheshire.
254,582 Telephone loud speaker. H. R. Richardson, 17, Kohinor avenue, Bushey, Hertfordshire, and R. W. Whitley, 16, Nella Road, Hammersmith, London.
254,628 Inflatable toy. J. F. Mulholland, 619 Culbertson street, Columbus, Ohio, U. S. A.
254,631 Paint brush. Rubber Brushes, Ltd., and E. Lord, 125, High Holborn, London.
254,634 Tire. Gummiwerke Fulda Akt.-Ges., 59 Künzellerweg, Fulda, assignee of L. Härter, 17 Sedanstrasse, Dresden, both in Germany.
254,681* Strip fastener. Hood Rubber Co., assignee of J. Perrault, both of Watertown, Massachusetts, U. S. A.

September 8, 1926

254,768 Spats or gaiters. E. D. Button, 26, Stockwell Road, London.
254,824 Electric conductors. J. L. Sands, Ouseley Cottage, College avenue, Maidenhead, Berkshire.
254,854 Automobile running board. E. E. Paine, 4614, Prospect avenue, Cleveland, Ohio, U. S. A.
254,935 Pneumatic tire cover. E. M. Dignan, 1, Cale street, Chelsea, London.
255,038* Electric cables. Felten & Guilleaume Carlswerk Akt.-Ges., Mülheim, Cologen, Germany.

September 15, 1926

255,088* Surgical trusses. A. Nyrop, Villa Bell Colle, Hörsholm, near Copenhagen.
255,207 Jam cover device. T. D. Bridger, Sunnyside, Woolmer Green Hill, Knebworth Station, Hertfordshire.
255,256 Electric cables. St. Helens Cable & Rubber Co., Ltd., and H. Evans, Trading Estate, both in Slough, Buckinghamshire.
255,318 Golf ball cleaner. J. E. Hamilton, Balsam Lodge, Rochert P. O., Minnesota, U. S. A.
255,348 Stoppers. A. Schwieger, 32 Burgermeister Finkstrasse, Hanover, Germany.
255,415* Foot arch support. J. P. Wijnman, 22 Ruystaelstraat, and J. Schleper & Zonen, 23 Sarphatipark, both in Amsterdam.
255,431* Heel protector. E. Bohn, 24 Rue Pastorelli, Nice, France.
255,470* Artificial teeth. F. Kriegler, Kukus, near Koniginhof, Czechoslovakia.

September 22, 1926

255,556 Jam cover device. C. H. Brough, 15, Bigwood Court, Golders Green, London.
255,612 Boot tips. G. E. Bennett, 13, Mount Road, Mitcham, Surrey.
255,617 Hot water bottle stopper. C. Forbes, Nithsdale, Kilmacolm, Renfrewshire.
255,678 Hot water bottle stopper. Leyland & Birmingham Rubber Co., Ltd., and G. Anderson, 24, Duke street, Aldgate, London.
255,686 Printing device. I. Brook, 27, Fairfax Road, Bedford Park, London.
255,757 Puncture closing lining for tire tube. J. Schwab, Winnipeg, Canada.
255,768 Holder for soap, sponge, etc. A. M. Rich, The Manor, Northword, Middlesex.
255,781 Mangle rollers. M. Mitchell, Gough street, Lucknow, Ontario, Canada.
255,796 Bottle stopper. B. Laporte, Ltd., and I. E. Weber, 51, Claremont Road, and H. E. Alcock, The Knoll, both in London.

*Not yet accepted.

Chemical patents will be found on page 83. Machinery and Process Patents on pages 86-87.

September 29, 1926

255,948 Stud for boot tread. H. Rogers, 11, Shallcomb street, Chelsea, London.
255,989 Garters. T. Milner, 72, Waterloo street, Glasgow.
255,990 Writing pad holder. C. H. Ellis, C. W. Cave and H. Taylor, 45, Farringdon Road, London.
256,005 Renewable horseshoe treads. F. S. Plant, 47, Clifton avenue, Peterborough.
256,055 Band saw pulley wheels. A. Anderson, Dunedin, Florida, U. S. A.
256,060 Vacuum closures. G. H. Bennett, Wellhouse Cottage, Beech, Alton, Hampshire, and A. S. Wilkin, Cremona Park, Newcastle-on-Tyne.
256,103 Boot sole. G. de la P. Hargreaves, 5, Deanery street, Park Lane, London.
256,114 Fountain pen filler. T. Kovacs, 108 Lindenstrasse, Berlin, Germany.
256,144 Vehicle bumper bar. J. L. Douglass, 102 Maiden Lane, New York, N. Y., U. S. A.
256,149 Surgical bandage. C. Buchmüller, 9 Mainluststrasse, Frankfort-on-Main, Germany.
256,235* Stoppers for sink traps, etc. B. J. Bengtsson, Hogbo, Kallered, Sweden.
256,263* Fulling rollers. G. Corti, Mouza, Italy.
256,307 Shaving appliance. W. J. Merifield, 60, Queens Road, Bristol.

*Not yet accepted.

New Zealand

September 9, 1926

54,892 Milking machine teat cup. Robert Caldwell, Whakamara.
56,773 Shock absorber. Frank Smith, Huddersfield Road, Elland, Yorkshire.

Germany

433,312 (July 1, 1925). Solid tire. Ludwig Härter, Sedanstrasse 17, Dresden.
433,548 (November 1, 1924). Protective covering of transparent thin, sheet rubber, for ladies' hats. Karl Berbig, Hildesheimerstrasse 17, Hannover.
434,165 (January 22, 1925). Construction material consisting of rubber with fabric inlays particularly for car bodies of motor vehicles. Continental-Caoutchouc- und Gutta Percha-Compagnie, Hannover.

France

609,292 (April 16, 1925). Paint for the upkeep of tires. M. Morel.
609,686 (April 27, 1925). Improvements in puncture-proof pneumatic tires utilizing foam rubber. P. Nivet.

Trade Marks

The United States

Two Kinds of Trademarks Now Being Registered

Under the rules of the United States Patent Office, trade marks registered under the Act of February 20, 1905, are, in general, fanciful and arbitrary marks, while those registered under the Act of March 19, 1920, Section 1 (b), are non-technical, that is, marks consisting of descriptive or geographical matter or mere surnames. To be registered under the later act trade marks must have been used for not less than one year. Marks registered under this act are being published for the first time when registered, any opposition taking the form of an application for cancellation.

September 14, 1926, Act of February 20, 1905

217,913 CLASSIC—golf bags, clubs and balls. R. H. Buhrke Co., Chicago, Illinois.
217,917 A square lined for shading and containing the word: PALMBROOK—tennis and golf balls, etc. Cromer & Cassel, Miami, Florida.
217,923 The words: "MAN O WAR," "GOLF BALL" and "KING OF THE TURF"—golf balls. Chicago Merchandise & Equipment Co., Chicago, Illinois.
217,924 The words: SPEED AWAY shaped to form a circle—golf balls. R. H. Buhrke Co., Chicago, Illinois.
217,926 OVER THE BRIDGE TO FAIRYLAND—rubber toys, etc. Hale Brothers, Inc., San Francisco, California.
217,955 Representation of a rabbit with his head in a hole, under this representation the word: "BUNNY"—golf balls, bags, etc. Donaldson Manufacturing Co., Ltd., Glasgow, Scotland.
217,961 BURR-KEY-BILT—golf balls, bags and clubs. R. H. Buhrke Co., Chicago, Illinois.
218,012 PHENOMENON—tennis balls, etc. T. H. Prosser & Sons, Ltd., London, England.
218,013 DORCO—inflatable rubber toys and balls. Dr. Dorogi & Co. Rubber Goods Factory, Ltd., Budapest, Hungary.

September 14, 1926, Act of March 19, 1920

218,018 VULCANIZED IN RUBBER—brushes for paint, varnish, wall, etc. Samuel M. Dell & Co., Inc., Baltimore, Maryland.

September 21, 1926, Act of February 20, 1905

218,037 PARATEX—textile fabric and rubber floor coverings. The Paratex Corporation, Paterson, New Jersey.
218,070 PARK LANE—raincoats, etc. Goodlow Corporation, New York, N. Y.
218,088 Representation of a hammer and around it the words: BROCKTON BENCH MADE—rubber, leather and textile boots, shoes and slippers. E. E. Taylor Co., Boston, Massachusetts.
218,089 A square in the center of which is the representation of an Indian—gloves of rubber, leather, fabric, etc. John V. Farwell Co., Chicago, Illinois.
218,129—AVIATOR—shoe soles and heels. Antonio Scodes, Laurel Hill, New York.
218,131 ENNA JETTICK—boots, shoes and slippers of rubber, leather, fabric, etc. Dunn & McCarthy, Inc., Auburn, New York.
218,161 Representation of a conventional tire blowout patch with small red rectangle disposed at the center and narrow red stripe bordering the lateral edges thereof—blowout patches for pneumatic tires. The Goodyear Tire & Rubber Co., Akron, Ohio.
218,174 JONELL—garters, suspenders, etc. John L. Graves, doing business as John L. Graves Co., Mason City, Iowa.
218,192 GLAZETTE—raincoats, rain hats and topcoats. American Garment Co., Boston, Massachusetts.
218,193 E-ZE-ON—baby pants. I. B. Kleinert Rubber Co., New York, N. Y.
218,294 VAGABOND SASH—girdles, corsets and rubber bands. Dorothy Bickum, New York, N. Y.

September 21, 1926, Act of March 19, 1920

218,309 FLEMING—knives for solid tires, regroovers, etc. Fleming Machine Co., Worcester, Massachusetts.
218,332 GOLD MEDAL—rubber and automobile snips, etc. The Henkel-Clauss Co., Fremont, Ohio.
218,355 DOUBLE WEAR—sanitary aprons and belts. American Narrow Fabric Co., Worcester, Massachusetts.

September 28, 1926, Act of February 20, 1905

218,429 PARALUSTRE—rubber tile flooring. The Republic Rubber Co., Youngstown, Ohio.
218,432 PIONEER—garden and steam hose, and piston packing. Pioneer Rubber Mills, San Francisco, California.
218,436 JIFFY PANTI WAIST—combination waist and baby pants. I. B. Kleinert Rubber Co., New York, N. Y.
218,479 FAIRWAY—rubber and rubber-fabric hose for lawns, gardens, etc. The Republic Rubber Co., Youngstown, Ohio.
218,484 Double circle, in the center the representation of a bird, and enclosed between the circles the words: RED BIRD—tire boots and reliners. Red Bird Boot & Reliner Co., Richmond, Indiana.
218,486 MONEX—vulcanization accelerators. The Naugatuck Chemical Co., New York, N. Y.
218,591 P. P. P.—machinery packing. Quaker City Rubber Co., Wissinoming, Philadelphia, Pennsylvania.
218,593 AMERICAN BEAUTY—hard rubber hair combs. American Hard Rubber Co., Hempstead and New York, N. Y.
218,596 JACO-SAVFLOR—floor mats. O. W. Jackson & Co., Inc., New York, N. Y.
218,601 REPCO—paste powder and rubber cement. United Shoe Machinery Corporation, Paterson, New Jersey, and Boston, Massachusetts.
218,606 Representation of a dandelion, across the stem the word: DANDYLINE—golf balls. Charles S. O'Connell, Meriden, Connecticut.
218,628 FITZU—shoes of leather, rubber, fabric, etc. A. H. Berry Shoe Corporation, Portland, Maine.
218,691 CASINO—rubber bands, etc. Schwan-Bleistift-Fabrik A.-G., Nuremberg, Germany.
218,692 TANDEM—rubber bands, etc. Schwan-Bleistift-Fabrik A.-G., Nuremberg, Germany.

October 5, 1926, Act of February 20, 1905

218,822 Square at the top of which is a circle and the words: "SUPERIOR QUALITY" and "EXTRA ADHESIVE," below the circle, a representation of a slipknot and beneath this representation, the words: "SLIPKNOT FRICTION TAPE"—friction tape fabric impregnated with an adhesive rubber compound. Plymouth Rubber Co., Inc., Canton, Massachusetts.
218,836 Square enclosing at the top a shield in which are the letters and numerals: "P R," "1896" and "Co.," beneath the shield the words: "FRICTION TAPE" and "HIGHEST EFFICIENCY TESTS; above the square the word: "CANTON"—friction tape fabric impregnated with an adhesive rubber compound. Plymouth Rubber Co., Inc., Canton, Massachusetts.
218,866 BURLY—pneumatic tires and inner tubes. The Pharis Tire & Rubber Co., Newark, Ohio.
218,890 Irregular circles through the center of which is the word: CHRYSLER, at the top the representation of a fancy radiator cap—tire covers. Chrysler Motor Corporation, Detroit, Michigan.
218,899 "HYLASTIC"—automobile and truck tires and tubes. The Mason Tire & Rubber Co., Kent, Ohio.
218,908 BESTOLITE—sheet packing and gaskets produced from fibrous material and rubber. Stewart R. Browne Manufacturing Co., Inc., New York, N. Y.
218,928 The letter: "R" on a red background—tires and tubes. The Miller Rubber Co., Akron, Ohio.
218,953 The word: ZEBRA beneath which is the representation of a zebra—tire patches. Vernon E. Guess, doing business as Zebra Rubber Co., Pine Bluff, Arkansas.
218,976 The word: "UNITED" superimposed on a shield—leather and rubber boots, shoes and slippers. The Miller Brothers Star Shoe Co., doing business as Miller United Shoe Stores Co., Cleveland, Ohio.

October 5, 1926, Act of March 19, 1920

218,984 GUM-WELD CUSHION—pneumatic tires. The India Tire & Rubber Co., Mogadore and Akron, Ohio.
218,992 TWOTONE ENAMELED RUBBER COVERS—running board covers. Rubber-On-Metal Welding Corporation, New York, N. Y.

The Dominion of Canada

Registered

September 14, 1926

40,441 Word: "VULCOSEAL"—tire sealing compound. John Reid Gillespie, Toronto, Ontario.

40,479 Word: "MISHKO"—composition and soles for footwear made therefrom. Mishawaka Rubber & Wooden Manufacturing Co., Mishawaka, Indiana, U. S. A.

September 21, 1926

40,503 Circle having a toothed edge enclosing an ellipse; at the top between the circle and the ellipse appear the words: "SUPER-FOOT-FORM"; and below the words: "CUSHION-SHOES"; within the ellipse is the representation of a foot with a star placed above the ankle—boots and shoes of rubber, leather, etc., Cushion Shoe Co., Buffalo, New York, U. S. A.

September 28, 1926

40,537 Capital letters: "A-B-C" hypenated—automobile accessories. American Brake-Lining Co., Sellersville, Pennsylvania, U. S. A.

40,544 Word: "FERMALITH," above a circle containing the device of a cross with trefoiled branches—chemical product to be used in the manufacture of paints, coatings, rubber, etc. Naamlooze Vennootschap Maastrichtsche Zinkwit Maatschappij, Franciscus Romanusweg No. 1, Maastricht, The Netherlands.

October 5, 1926

40,559 Word: "NOVOLITH," above a circle containing a device of chain links attached to a common central ring; below the circle are the words: "G. ROCOUR & Co. (N. V.)."—chemical product to be used in the manufacture of paints, coatings, rubber, etc. Societe Anonyme Pour La Vente Des Blancs De Zinc, G. Rocour & Cie, 56 Voerweg, Eysden, The Netherlands.

40,566 Word: "OMO," associated with the representation of a pair of wings—dress shields, sanitary apparel, rubber aprons, etc. The Omo Manufacturing Co., Middletown, Connecticut, U. S. A.

The United Kingdom

September 8, 1926

466,681 COPPER QUEEN—tubular hose and packing. Pioneer Rubber Mills, 345 Sacramento street, San Francisco, California, U. S. A. (Frank B. Dehn, 103, Kingsway, London, W. C. 2).

469,533 MONARCH—machine and conveyer belting. Gutta-Percha & Rubber, Ltd., 47, Yonge street, Toronto, Canada.

470,777 BUCKEYE—tires and inner tubes. Kelly-Springfield Tire Co., 250 West 57th street, New York, N. Y., U. S. A. (Marks & Clerk, 57, Lincoln's Inn Fields, London, W. C. 2).

471,820 ZIPP-ON—rubber boots, shoes, slippers, overshoes and goloshes. The New Liverpool Rubber Co., Ltd., Walton Works, 176 Rice Lane, Walton, Liverpool.

September 15, 1926

B470,690 Square containing the words: E. WOLF & SON'S PENCIL LIGHTNING ERASER—erasers. The Royal Sovereign Pencil Co., Ltd., Britannia Pencil Works, 54, Neasden Lane, Neasden, London, N. W. 10.

September 22, 1926

469,815 PALMER—vehicle wheel shields and tire repair outfits. The Palmer Tyre, Ltd., 100, Cannon street, London, E. C. 4.

471,568 RAYCREPE—waterproof and rainproof clothing. Sharples Raincoat Co., Ltd., 245, Oxford street, London, W. 1.

472,173 FLYWING—goods manufactured from rubber. Wood-Milne, Ltd., 2, Central Buildings, Westminster, London, S. W. 1.

472,284 INSULON—goods manufactured from rubber and gutta percha. Thomas de la Rue & Co., Ltd., 110, Bunhill Row, London, E. C. 1.

September 29, 1926

469,814 PALMER—tires, inner tubes, patches, rubber solution, valve tubing, etc. The Palmer Tyre, Ltd., 100 Cannon street, London, E. C. 4.

470,961 ELIDA—surgical and hygienic soft and hard rubber goods. Otto Dillner, 30 Torgauerstrasse, Leipzig-Neusellerhausen, Germany (Boult, Wade & Tennant, 112, Hatton Garden, London, E. C. 1).

471,550 RESISTON—all goods included in Class 8. American Hard Rubber Co., 11 Mercer street, New York, N. Y., U. S. A. (Haseltine, Lake & Co., 28, Southampton Buildings, London, W. C. 2).

New Zealand

July 29, 1926

24,025 TIT-BIT—boot protectors and studs, etc. Blakey's Boot Protectors, Ltd., Armley Malleable Ironworks, Modder Place, Armley, Leeds, Yorkshire, England.

August 26, 1926

23,518 GOODRICH—tires, inner tubes, patches, belting, tire repair fabric, mats, and casings. The B. F. Goodrich Co., 1780 Broadway, New York, N. Y., U. S. A.

23,643 VICEROY—rubber erasers and bands. The Canadian I. T. S. Rubber Co., Ltd., 26 Alpine Avenue West, Toronto, Ontario, Canada.

Designs

The United States

71,059 Tread for cord tires. Term 7 years. Abraham L. Freedlander, assignor to The Dayton Rubber Manufacturing Co., both of Dayton, Ohio.

71,062 Pipe. Term 14 years. Isaac Q. Gurnee, Butler, and Albert A. Smith, Riverdale, assignors to Superior Hard Rubber Co., Butler, all in New Jersey.

71,084 Tire. Term 14 years. Edward M. Sears, Akron, Ohio, assignor to The B. F. Goodrich Co., New York, N. Y.

71,124 Paving block or similar article. Term 14 years. Clarence Wright, assignor to Wright Rubber Products Co., both of Racine, Wisconsin.

71,228 Tire tread. Term 14 years. Louis T. Vance, assignor to Racine Rubber Co., both of Racine, Wisconsin.

71,229 Tire tread. Term 14 years. Louis T. Vance, assignor to Racine Rubber Co., both of Racine, Wisconsin.

Germany

957,164 (June 16, 1926). Piano ash-holder with rubber legs. Porzellanfabrik, Arno Fischer, Ilmenau.

957,332 (July 9, 1926). Tube for cycles, motor vehicles, etc., with air chambers and individual valves. Hanz Mentzel, Degerstrasse 15, Dusseldorf.

957,458 (June 21, 1926). Rubber heel with raised, resilient non-skid strip. Grahneis & Börner, Zipsendorf, Beg. Leipzig.

957,695 (July 14, 1926). Inset for fallen arches with removable solid rubber cushioning. Hermann Schaper, Steintwiete 15, Hamburg.

958,436 (July 22, 1926). Rubber rules. Sächsische, Gummi- und Asbest-Gesellschaft (Thermesol-Gummifabrik) Radebeul b. Dresden.

958,496 (July 22, 1926). Heel protector. Sächsische Gummi- und Asbest-Gesellschaft (Thermesol-Gummifabrik) Radebeul b. Dresden.

958,558 (July 10, 1926). Rubber bird, fixed within a ring. Firma M. Steinberg, Köln-Lindenthal.

958,693 (June 26, 1926). Pneumatic saddle-cover for bicycle or motorcycle saddle, consisting of a rubber tube spiral that can be filled with air inserted in the cover. August Bernhard, Rheinhäusserstrasse 110, Mannheim.

958,863 (July 23, 1926). Rubber dolls' head. Ungarische Gummiwaarenfabrik A.-G., Budapest. Represented by Dr. W. Karsten and Dr. C. Wiegand, Berlin, S. W. 11.

958,960 (July 2, 1926). Flag or pernant of leather or rubberized fabric. Franz Walter Wania, Niedersedlitzerstrasse 5, Dresden-Zschachwitz.

959,133 (July 30, 1926). Inlay for rubber tires for motor vehicles. P. Darmstadt, Bergen, Kr. Hanau.

959,152 (June 26, 1926). Rubber collar for hairdressers. Willy Hauser, Reichenberger Strasse 1, Berlin.

959,600 (March 25, 1926). Removable permanent rubber sole with resilient edge and steel inserts. Hugo Glass, Fregestrasse 8, Leipzig.

959,984 (August 11, 1926). Doll's shoe of sheet rubber. Gummiwerk Union Carl O. Witthauer, Neustadt b. Coburg.

960,000 (December 11, 1925). Wheel with solid rubber tire. Siemens-Schuckertwerke G. m. b. H., Berlin-Siemensstadt.

960,155 (June 26, 1926). Rubber plate for artificial teeth. Ernst Riese, Schildesche bei Bielefeld.

960,180 (July 31, 1926). Rubber non-skid tire. B. Polack A.-G., Waltershausen i. Th.

960,181 (July 31, 1926). Rubber non-skid tire. B. Polack A.-G., Waltershausen i. Th.

960,195 (August 9, 1926). Rubber cap net for seashore or for sport. Gummiwaren-Fabrik M. Steinberg, Köln-Lindenthal.

960,480 (August 12, 1926). Benzine tube of rubber with one-piece metal inlay. Peter Rost Gummi-warenfabrik, Cologne.

960,510 (May 14, 1926). Leather spats with protective rubber strips. Gustav Wiemann, Barntrup, Lippe.

960,521 (July 2, 1926). Protective cover for caps made of colored rubber or rubberized fabric. Franz Th. Otto & Co., Hannover.

960,551 (August 16, 1926). Exchangeable beaded tire for motorcycles and automobiles. Gustav Christens, Billh. Röhrendamm 198a, Hamburg.

960,824 (September 2, 1925). Rubber gymnastic shoe with asbestos insole. Georg Beck, Eisenacherstrasse 99, Berlin-Schöneberg.

961,075 (June 29, 1926). Dust cover of rubber without thread for bicycle valves. Firma L. Lorenz, Nieder-Ingelheim a. Rh.

TIRE INVENTORY—PRODUCTION—DOMESTIC SHIPMENTS

August, 1926

	Inventory	Production	Total Shipments
High pressure cord casings	3,459,221	2,246,111	2,581,574
High pressure fabric casings	723,704	137,828	308,329
Balloon casings	3,116,440	2,020,347	2,167,943
Solid and cushion tires	178,060	43,579	56,119
High pressure inner tubes	7,143,811	3,543,903	4,862,692
Balloon inner tubes	4,552,647	2,024,197	2,321,747

COTTON AND RUBBER CONSUMPTION IN TIRES AND TUBES

	Pounds
Cotton fabric	16,139,961
Crude rubber	49,840,601

Rubber Association figures representing 75 per cent of the industry.

The Market for Rubber Scrap

New York

The demand for rubber scrap during October was active and greater than in September. Export business in scrap is of minor proportions and without effect on the market. Collections on all grades are covering a fairly wide area. Seasonal falling off of tire collections will be due with coming of winter weather although dealers' stocks will doubtless be ample. Practically all qualities of scrap except heels and miscellaneous black scrap have advanced somewhat in price since a month ago.

BOOTS AND SHOES. Prices are firm and advancing for all grades. The consuming demand has improved.

INNER TUBES. Stocks and collections are in good volume. The demand is increasing steadily for both No. 1 and No. 2 tubes and prices have advanced fractionally.

TIRES. Collections are progressing actively due to the strong demand by reclaimers. All qualities and grades are firm and advancing in price.

Quotations for Carload Lots

October 25, 1926

Boots and Shoes		
Boots and shoes, black	lb.	$0.02½@$0.02¾
Red and white	lb.	.01½@ .01¾
Trimmed arctics, black	lb.	.01¼@ .01½
Untrimmed arctics	lb.	.00¾@ .00⅞
Tennis shoes and soles	lb.	.01⅛@ .01¼
Hard Rubber		
No. 1 hard rubber	lb.	.13 @ .14
Battery jars, black compound	lb.	.01¾@ .01⅞
Inner Tubes		
No. 1, floating	lb.	.09¼@ .10
No. 2, compounded	lb.	.07½@ .08⅛
Red	lb.	.07 @ .07⅛
Mixed tubes	lb.	.06¾@ .06⅞
Mechanicals		
Mixed black scrap	lb.	.01 @ .01⅛
Heels	lb.	.00⅞@ .01
Hose, air-brake	ton	29.00 @32.00
regular	ton	23.00 @24.00
No. 1 red	lb.	.02¼@ .02½
No. 2 red	lb.	.01¾@ .02
Red packing	lb.	.01¼@ .01⅜
White, druggists' sundries	lb.	.03½@ .04
Mechanical	lb.	.01½@ .01⅝
Tires		
Pneumatic Standard—		
Mixed auto tires with beads	ton	27.00 @28.00
Beadless	ton	44.00 @45.00
White auto tires with beads	ton	43.00 @44.00
Beadless	ton	39.00 @41.00
Mixed auto peelings	ton	38.00 @40.00
Solid—		
Mixed motor truck, clean	ton	40.00 @42.00

The following scrap rubber dealers are listed in our Buyers' Directory. For complete information see Index of Advertisers on Page 114.

Birkenstein, S., & Sons, Chicago, Illinois.
Chalfin, Joseph, & Co., Inc., New York, N. Y.
Cummings, Wm. H., & Sons, New York, N. Y.
Muehlstein, H., & Co., Inc., New York, N. Y.
Norton, M., & Co., Medford, Massachusetts.
Schnurmann, J., London, England.
Weber, Hermann, Hoboken, New Jersey.

Reclaimed Rubber

New York

All reclaiming plants are operating at full capacity. The increased manufacturing facilities added within the past year by practically all the reclaiming companies do not enable them to satisfy current demand. Reclaimers are now realizing on the development work which raised their products to dependable standards and gained for them a higher technical appreciation on the part of rubber chemists, compounders and manufacturers.

Although rubber scrap shows some advances current quotations of reclaims show no changes over those of one month ago except in the black grades of automobile tire stocks. These have declined ¼ cent due to competition and all prices are firm. Heavy volume of business is assured for the balance of this year.

New York Quotations

October 25, 1926

	Specific Gravity	Price Per Pound
Auto Tire		
Black	1.21	$0.09 @$0.09½
Black, washed	1.18	.10¾@ .11¼
Black selected tires	1.20	.10½@ .11
Dark gray	1.35	.12 @ .14
Light gray	1.38	.15 @ .16
White	1.40	.17½@ .18¼
High Tensile Black		
Super-reclaim, No. 1	1.20	.20 @ .22
No. 2	1.20	.17 @ .18
Shoe		
Unwashed	1.60	.08¼@ .09
Washed	1.50	.11¼@ .12¼
Tube		
No. 1	1.00	.19 @ .21
No. 2	1.18	.16 @ .17
Miscellaneous		
High grade, red	1.35	.17½@ .18½
Truck tire, heavy gravity	1.55	.08¼@ .09
Truck tire, light gravity	1.40	.09¼@ .10¼
Mechanical blends	1.60	.08 @ .09

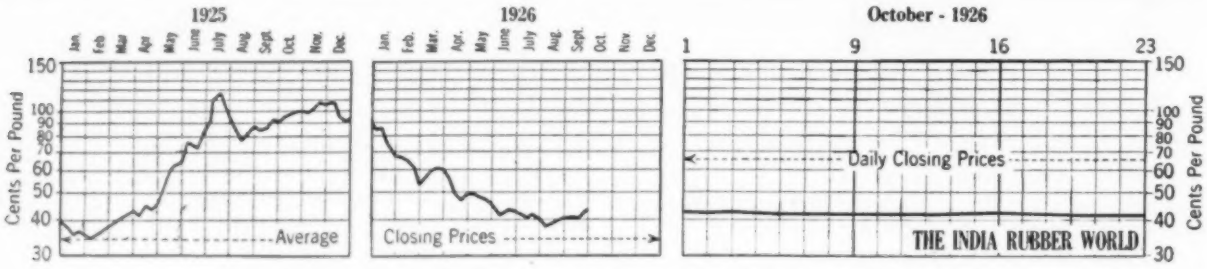
Plantation Rubber Exports from Malaya

January 1 to August 31, 1926

	From Singapore Tons	From Penang Tons	From Malacca Tons
To United Kingdom	6,908.49	7,893.08	7,229.41
British Possessions	2,582.94	146.78	151.04
Continent of Europe	8,947.11	1,564.00	2,153.56
United States	96,013.97	19,637.89	9,161.58
Japan	6,960.94	1,092.49	1,236.77
Other Countries	85.65	7.00	.....
Totals	121,499.10	30,341.24	19,932.36

The following reclaimed rubber dealers are listed in our Buyers' Directory. For complete information see Index of Advertisers on Page 114.

Appleton Rubber Co., Franklin, Massachusetts.
Bloomingdale Rubber Co., New York, N. Y.
Clapp, E. H., Rubber Co., Boston, Massachusetts.
Defiance Rubber Co., Defiance, Ohio.
Manhattan Rubber Manufacturing Co., Passaic, New Jersey.
Nearpara Rubber Co., Trenton, New Jersey.
New Jersey Rubber Co., Lambertville, New Jersey.
Pequanoc Rubber Co., Butler, New Jersey.
Philadelphia Rubber Works, Philadelphia, Pennsylvania.
Rubber Regenerating Co., Naugatuck, Connecticut.
Somerset Rubber Reclaiming Works, New Brunswick, New Jersey.
U. S. Rubber Reclaiming Co., Inc., New York, N. Y.
Vulcan Recovery Co., Trenton, New Jersey.
Xylos Rubber Co., Akron, Ohio.



Ratio Graph of New York Closing Prices of Spot Ribbed Smoked Sheets

Review of the Crude Rubber Market

New Restriction Rules

CABLES from the Colonial Office, London, reported on October 25 the following change of regulations by which exports of British controlled plantation rubber will be determined quarterly from November 1, 1926, to October 31, 1927.

1. If the average price of rubber in London is under 21, but not under 15 pence per pound during any quarter, the exportable percentage of standard productions for the ensuing quarter at the minimum rate of duty will be reduced by 10. If, however, the reduction thus effected is a reduction from the figure of 100 per cent, the reduced percentage for the ensuing quarter will be 80.

2. If the average price of any quarter is not under 21, but less than 24 pence, there will be no change in the ensuing quarter. If, however, in each of the three consecutive quarters the average price is not under 21, then the percentage for the ensuing quarter will be increased by 10.

3. If the average price for any quarter is 24 or over, the percentage will be increased by 10 for the ensuing quarter. If, however, the increase effectable under this regulation is an increase from 80 per cent, the increased percentage for the ensuing quarter will be 100.

4. If the average descends below 15 in any quarter, the percentage in the ensuing quarter will be reduced to 60.

5. If the average exceeds 36 in any quarter, the percentage in the ensuing quarter will be increased to 100.

6. In no case will the percentage be increased above 100 or decreased below 60.

During the past quarter the exportable allowance was 100 per cent of standard production and the average price in London fell below 21 pence, therefore Rule 1 applies and the exportable allowance for the quarter beginning November 1 will be reduced to 80 per cent.

No announcement has been made regarding either the outstanding unusued coupons held by the rubber growers, or revision of standard production per acre. If not cancelled the unused coupons would permit the exportation of about 40,000 tons of rubber which would serve to offset during the coming quarter the 20 per cent reduction.

A ruling by the Colonial office may be expected later on the disposition of the unused export coupons and production assessment. It has been said that unused export coupons or licenses can not be cancelled without special authorization by Parliament which does not reconvene until November 9.

New York Open Market

In October the rubber market was very firm and steady. Prices of spot fluctuated less than one cent between September 25 and October 23. The general price tendency was downward from 43 cents. The lowest closing price for the month was 42¼ cents, the average 42⅗ cents.

Business for the first half month was fair and spotty and for the last half rather quiet. Factories were indifferent buyers. They are practically rid of their stocks of high price rubber that burdened them earlier in the year. The large plants are always bought several months ahead, generally in the Far East. Announcement of the new rules applying to exportations of plantation rubber had no disturbing influence on the New York market. In view of the fact that stocks in the United States, London and Singapore total at present 165,000 tons, curtailment of exports to 80 per cent for the next quarter will not result in shortage of supply. Following the announcement of the new regulations governing exports the market eased slightly on nearby positions and firmed correspondingly on those of next year when the effect of restriction will be apparent.

London cables predict an unsettled market there until decision is made officially concerning unused export coupons and the basis of reassessment. A cable from the Far East stating that this basis would be 300 pounds per acre was not credited in the New York market. Such a revision is decidedly too drastic and would react to stimulate the competition of reclaim and intensify the various defensive efforts to combat excessive crude rubber prices. The market outlook is considered good for stable prices especially if they can be maintained not far from the present level.

During the week of October 2 the market was very firm and steady and eastern markets were firm and high. There was good demand by dealers but sellers were few. Rumors were active concerning the possibilities of 20 per cent restriction for next quarter and the fate of unused coupons. Parás were firm but unsought.

The week of October 9 dull conditions continued. Factory demand proved very light and dealers assumed a waiting attitude. Parás were steady and neglected, balatas quiet.

Market conditions for the week of October 16 continued quiet and steady with some factory interest in spot and nearby. There was a firm advance of ½ cent on eastern cables but sellers were few.

Trading for the week of October 23 was uneventful. At the week end there was a report from London that half the unused coupons were to be cancelled and that 20 per cent restriction would apply to shipments for next quarter. Factories held back their orders for rubber but are due soon to place them for January-March positions. Parás and balatas were without interest.

Importations of all grades in September were 38,132 tons, compared with 27,071 tons one year ago. Plantation arrivals for September were 36,030 tons, compared with 24,777 tons one year ago. Total importations of plantation rubber for nine months ended September 30, 1926, were 290,975 tons compared with 256,244 tons for the corresponding period of 1925. Total importations of all grades of rubber for the nine months ended September 30, were

New York Spot Closing Rubber Prices—Cents Per Pound

PLANTATIONS	September, 1926				October, 1926																
Sheet	27	28	29	30	1	2	4	5	6	7	8	9	11	12*	13	14	15	16	18	19	20	21	22	23
Ribbed smoked	43	42¾	42½	42¾	43	42½	43	42¾	42¾	42¼	42¼	42¼	42¼	....	42¼	42½	42¾	43	42¾	42½	42¼	42¼	42¼	42½
Crêpe																								
First latex	43	43	42½	43	43¼	43	43	42¾	42¾	42¼	42¾	42¼	42¼	....	42¼	42½	42¾	43	42¾	42½	42½	42¼	42¼	42¾
No. 2 blanket	40¾	40½	40¼	40¾	41¼	40¾	41	40½	40¾	39¾	39½	39¾	39¾	....	39¾	40	40¼	40½	40½	40¼	40	40	40	40¾
No. 3 blanket	40¼	39¾	39½	39¾	40¼	39¾	40¼	40¼	40¼	39½	39	39	39	....	39	39½	40	40¼	40¼	39½	39½	39¼	39½	40
No. 4 blanket	39¼	39	38¼	39	39¾	39	39½	39¼	39¼	38¼	38	38	38¾	....	38¼	38¾	39¼	39½	39½	38¼	38½	38¼	38¾	39½
Thin clean brown	40	40	39½	40	40½	40	40½	40	40¼	39½	39¼	39	39	....	39	39½	39¾	40	40	39¾	39½	39¼	39½	40
Rolled brown	37	37¼	37	37¼	37½	37¼	37½	37¼	37	36½	36¼	36¼	36¼	....	36¼	36½	36¾	37	37	36¼	36¼	36¼	36¼	36¼
Off latex	42	42½	42	42¼	42½	42½	42½	42¼	42¼	41¾	41¾	41¾	41¾	....	41¾	41¾	42¼	42¼	42¼	42	42	41¾	41¾	42

*Holiday.

309,838 tons compared with 274,360 tons for the corresponding period of 1925. Arrivals of crude rubber October 1 to 23 were 24,192 tons.

Arrivals for the full month of October are estimated at 31,300 tons, compared with 36,774 tons for September.

Rubber Afloat to the United States

(Figures in Long Tons)

Wk. End.	Brt. Malaya	Ceylon	E. Indies	London	Total
October 2	6,071	1,325	1,164	282	8,842
October 9	7,167	934	1,408	179	9,688
October 16	4,598	881	1,275	251	7,005
October 23	6,345	624	1,669	475	9,113

Gross exports of crude rubber from Malaya in September totaled 35,912 long tons and gross imports into Malaya, including wet rubber, 13,971 long tons. Dealers stocks in Singapore and Penang August 31 amounted to 23,362 long tons.

New York Quotations

Following are the New York spot and future rubber quotations for one year ago, one month ago, and October 25, the current date:

	Oct. 26, 1925			Sept. 25, 1926		Oct. 25, 1926	
Plantation Hevea							
Rubber latex (Hevea)...*gal.*	$3.25	@		$1.75	@	$1.75	@
CREPE							
First latex, spot	.99	@	.99½	.42¼@.42½		.42¼@.43¾	
Aug.-Sept.		@		.42¼@.42½		@	
Oct.-Dec.	.95	@	.95½	.43	@	.43	@.43¼
Jan.-Mar.	.86½@		.87	.43½@.44		.43½@.44¼	
Apr.-June	.82	@	.83	.44	@.45	.45	@
Off latex, spot	.97	@	.97½	.41½@.41¾		.41¾@	
Amber No. 2, spot	.93	@	.94	.41	@	.41	@
Aug.-Sept.		@		.41	@		@
Oct.-Dec.	.90	@	.90½	.41	@	.41	@.41¼
Jan.-Mar.	.79	@	.80	.41½@		.41½@	
Apr.-June	.74	@	.75	.41½@		.42	@
Amber No. 3, spot	.92	@	.93	.40	@.40½	.40½@	
Brown, thin, clean	.90	@	.91	.39¾@.40¼		.40	@.40½
Brown specky	.88	@	.89	.39½@.40		.39	@.40
Brown, roll	.76	@	.77	.36½@.37		.36½@.37	
Sole crêpe	†.05	@		.70	@	.70	@
SHEET							
Ribbed, smoked spot	.98	@	.98½	.42	@.42¼	.42½@.42¾	
Aug.-Sept.		@		.43	@		@
Oct.-Dec.	.94	@	.94½	.42½@.43		.43⅛@	
Jan.-Mar.	.86	@	.87	.43½@.44		.44	@.44¼
Apr.-June	.80	@	.81	.44	@.44½	.44½@.45	
East Indian							
PONTIANAK							
Banjermassin	†.16	@	.16	.17¾@		.17½@	
Pressed block	†.22	@	.24	.27¾@		.27½@	
Sarawak		@		.17½@		.17¼@	
South American							
PARÁS							
Upriver, fine	.94	@		.38	@	.37½@	
Upriver, fine	*1.12	@		*.54	@	.52½@	
Upriver, medium		@		.34	@	.30	@
Upriver, coarse	.62	@		.29	@	.28	@
Upriver, coarse	*.83	@		*.42	@	*.41	@
Islands, fine	.78	@		.34	@	.34	@
Islands, fine	*1.07	@		*.52	@	*.50	@
Cameta	.44	@		†.25	@		@
Acre, Bolivian, fine	.94½@			.39	@	.38	@
Acre, Bolivian, fine	*1.13	@		*.54	@	*.53	@
Beni, Bolivian	.95	@		.39½@		.38½@	
Madeira, fine	†.97	@		.39	@	.39	@
Peruvian, fine	.92	@		.38	@	.36	@
Tapajos, fine	.87	@		.37	@	.35	@
South American							
CAUCHO	Oct. 26, 1925			Sept. 25, 1926		Oct. 25, 1926	
Upper Caucho ball	$0.63	@			@	$0.28½@	
Upper Caucho ball	*.85	@		*	@	*.42	@
Lower Caucho ball	.59	@			@	.25	@
Maniçobas							
Ceará negro heads	.65	@		†.35	@	†.32	@
Ceará scrap	.45	@		†.18	@	.16	@
Maniçoba, 30% guar.	.50	@		†.34	@	.33	@
Mangabeira, thin sheet	.50	@		†.38	@	.35	@
Centrals							
Central scrap	.56	@		.28	@	.28	@
Central wet sheet	.43	@		.22	@	.22	@
Corinto scrap	.56	@		.28	@	.28	@
Esmeralda sausage	.56	@		.28	@	.28	@
Guayule							
Duro, washed and dried	.52	@		.32½@		.33½@	
Leon, washed and dried		@		.30½@		.31	@
Gutta Percha							
Gutta Siak	.24	@		.33	@	.33	@
Gutta Soh		@		.30¼@		.34¼@	
Red Macassar	3.60	@		2.80	@	2.80	@
Balata							
Block, Ciudad Bolivar	.61	@		.48	@.50	.48	@.50
Colombia	.53	@		.42	@	.42	@
Panama	.53	@		.42	@	.42	@
Surinam, sheet	.75	@		.76	@	.76	@
amber	.82	@		.81	@	.81	@
Chicle							
Honduras	‡.58	@.68		‡.65	@	‡.56	@.60
Yucatan, fine	‡.58	@.68		‡.65	@	‡.56	@.60

*Washed and dried crêpe. Shipment from Brazil.
†Nominal. ‡Duty paid.

Low and High New York Spot Prices

PLANTATIONS	1926*			October 1925			1924		
First latex crêpe	$0.42¼	@	$0.43¼	$0.92	@	$1.03½	$0.29	@	$0.33½
Smoked sheet, ribbed	.42¼	@	.43	.92	@	1.02½	.28½	@	.33
PARAS									
Upriver, fine	.38	@	.39	.71½	@	.95	.28¼	@	.32½
Upriver, coarse	.28	@	.30	.46	@	.63	.18¼	@	.23
Islands, fine	.34	@	....	.63	@	.78	.24¼	@	.29½
Cametá	.26	@	.26½	.37	@	.48	.14½	@	.19

*Figured to October 23, 1926.

London

The market for October was generally quiet, without buying or speculative interest. Prices generally were sagging especially in the third week. There was no enthusiasm over the new rules regulating the restriction of rubber exports, and the market assumed a waiting attitude pending official enlightenment on changes in assessment of estates production basis.

The market week of October 2 was firm and steady. Under dealer and speculative support the price advanced ⅜ pence to 21⅛ pence and held that level for the last half of the week.

During the week of October 9 trading was quiet but prices were generally firm. There were some speculative sales but factory buying interest was small. Toward the end of the week prices eased off ¼ pence as the market became dull.

The week ended October 16 opened with active buying for American account. This sufficed to regain the drop in prices of the previous week. In general, business was dull and uneventful the remainder of the week.

During the week of October 23 a price decline followed increased selling early in the week. Prices on futures sagged. Business was somewhat speculative although local and continental

factory buying appeared. The week closed with conditions active and firm reflecting the hope for possible favorable governmental action on estate assessments.

London stocks on October 23 were 6,493 tons more than on September 25, an average weekly gain of 1,623 tons for 4 weeks. The weekly record was as follows: October 2, 36,065 tons; October 9, 37,226 tons; October 16, 39,650 tons; October 23, 41,080 tons.

Singapore

The Singapore market in October followed closely the course of the London and New York markets. It was generally dull and declining although the price changes were minor in amount being 20⅛ pence on October 1 and 20 pence on October 23. On the latter date the tone was steady despite the rumors predicting lower estate assessments under the revised regulations.

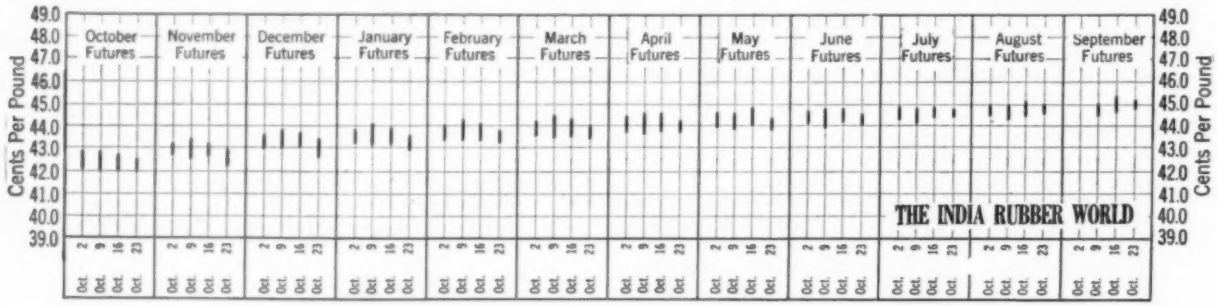
The Rubber Exchange of New York, Inc.

Trading on the rubber exchange from September 27 to October 23 inclusive resulted in the sale of 4,515 contracts equivalent to 11,287½ long tons, as compared with 3,346 contracts and 8,364 long tons the previous month. This increase, about 35 per cent, indicates the marked improvement of interest in futures largely from January to March. From day to day the market opened more often quiet than active but closed for the most part steady and firm. The tendency was inclined to weakness with little display of outside interest. The trading was largely professional with very little interest on the part of manufacturers.

The new rules announced by the Colonial Office to govern exportations of British controlled plantation rubber were received by cable October 23. They are considered an improvement over the former rules in that they are established for a year. Further cables from London indicate that the government decision on estate production reassessment will be rendered October 29. The market inactivity both in New York and London was due to the uncertainty regarding the reassessment matter and unused export coupons.

Following the report from London on the new rules, spot and nearby prices weakened and future positions showed increased firmness and trading was greatly reduced in volume.

New York Rubber Exchange—High and Low Monthly Futures—Cents Per Pound—October 2 to October 23, 1926



The Rubber Exchange of New York, Inc.

Daily Market Futures—Ribbed Smoked Sheets—Closing Prices—Cents Per Pound

1926	September 27	28	29	30	1	October 2	4	5	6	7	8	9	11	12*	13	14	15	16	18	19	20	21	22	23
October.....	42.5	42.6	42.1	42.6	42.8	42.6	42.8	42.5	42.4	42.3	42.0	42.0	42.2	...	42.0	42.2	42.5	42.7	42.5	42.5	42.4	42.2	42.0	42.4
November...	43.0	43.1	42.7	43.0	43.2	43.1	43.4	43.0	42.8	42.5	42.4	42.6	42.8	...	42.6	42.8	43.2	43.2	42.9	42.8	42.6	42.4	42.2	42.9
December...	43.0	43.6	42.9	43.3	43.6	43.6	43.8	43.4	43.3	42.9	42.8	42.9	43.2	...	43.0	43.2	43.7	43.6	43.4	43.1	43.0	42.8	42.6	43.3
1927																								
January.....	43.8	43.8	43.2	43.5	43.8	43.7	44.1	43.6	43.5	43.2	43.1	43.1	43.3	...	43.1	43.4	43.8	43.9	43.4	43.4	43.2	42.9	42.9	43.6
February...	44.0	43.9	43.3	43.7	44.0	43.9	44.3	44.0	43.8	43.5	43.3	43.3	43.4	...	43.3	43.5	44.1	44.1	43.6	43.7	43.5	43.2	43.1	43.8
March.....	44.2	44.1	43.5	44.0	44.2	44.2	44.5	44.4	44.0	43.7	43.4	43.4	43.7	...	43.5	44.0	44.4	44.3	43.9	43.9	43.7	43.5	43.4	44.0
April.....	44.4	44.3	43.7	44.2	44.4	44.4	44.6	44.5	44.1	43.9	43.6	43.6	43.9	...	43.7	44.2	44.5	44.6	44.2	44.2	44.0	43.7	43.6	44.2
May.....	44.6	44.5	43.9	44.4	44.6	44.5	44.6	44.6	44.3	44.1	43.8	43.8	44.2	...	44.0	44.4	44.6	44.8	44.4	44.4	44.1	43.8	43.8	44.4
June.....	44.7	44.7	44.1	44.6	44.7	44.7	44.8	44.7	44.5	44.3	43.9	43.9	44.3	...	44.2	44.6	44.8	44.8	44.6	44.6	44.4	44.0	44.0	44.6
July.....	44.9	44.9	44.3	44.8	44.8	44.8	44.8	44.8	44.7	44.5	44.1	44.1	44.5	...	44.4	44.8	45.0	44.9	44.8	44.8	44.7	44.4	44.4	44.8
August.....	45.0	45.0	44.5	45.0	45.0	45.0	45.0	45.1	44.8	44.7	44.3	44.3	44.6	...	44.5	45.1	45.2	45.1	45.0	45.0	44.9	44.6	44.6	45.0
September...	...	...	...	...	...	45.1	45.1	45.4	45.0	44.9	44.5	44.5	44.8	...	44.7	45.3	45.4	45.3	45.2	45.2	45.1	44.8	44.8	45.2

*Holiday.

The Market for Compounding Ingredients

New York

THE demand for compounding ingredients of every sort has been very active for many weeks. Purchases are mostly to meet the manufacturing demand occasioned by the heavy volume of orders for rubber goods placed for early fall and winter delivery. Practically every line of rubber goods is being produced at approximately full capacity. Competition has effected some reduction in the prices of certain of the cheaper compounding ingredients, notably clay, whiting, mineral rubber and carbon black.

ACCELERATORS. The demand for ultra-accelerators is gaining constantly in volume. The same may be said of those of milder activity. In practically all compounding practice in every line of rubber work the economic and technical value of accelerators renders them indispensable. No reductions in the prices of accelerators have been made for two months.

ANTI-OXIDANT. Practical trials of anti-oxidants have been made in every line of rubber goods with satisfactory results shown by accelerated aging tests. The ultimate practice will call for a small percentage in every stock to effect 100 per cent increase in the life of the goods.

BENZOL. In the last week of September the 90 per cent grade was reduced 1 cent a gallon, followed a week later by the same reduction on all grades. Consuming interest holds very active for benzol with supplies ample.

CARBON BLACK. The last of September spot black was firm with heavy buying by the rubber industry. Increase of prices is suggested for next year due to the announced decision of the Louisiana Conservation Commission of periodically lowering the allowance of gas for black manufacture. Most of the black is produced in Monroe parish in Louisiana. Rubber manufacturers made heavy purchases of black during October.

CLAY. The recognized reinforcing value of hard clays and their low price have led to their extensive use. Clay business has recently become markedly competitive and price cutting has resulted. On the best grades the price remains firm and unchanged.

LITHARGE. The drop in the price of pig lead a month ago did not suffice to affect that of litharge. Buyers are protected for four months against a decline.

LITHOPHONE. Good movement is reported for lithophone on contracts.

MINERAL RUBBER. The consumption of mineral rubber is increasing not only in rubber goods but prospectively in the manufacture of battery boxes.

SOLVENT NAPHTHA. This solvent is moving very actively especially in the proofing trade. Prices are unchanged.

ZINC OXIDE. Both pure and leaded grades are favored for their special adaptations in rubber goods. Prices are firm and unchanged.

New York Quotations

October 25, 1926

Accelerators, Inorganic

Lead, carbonate	lb.	$0.10¼	@
Lead, red	lb.	.11¼	@
sublimed white	lb.	.10	@
sublimed blue	lb.	.10	@
Lime, R. M. hydrated	ton	15.00	@
Litharge	lb.	.11¼	@
Magnesia calcined, light, (bbls.)	lb.	.40	@
calcined, md. light (bbls.)	lb.	.15	@
calcined, extra light (bbls.)	lb.	.50	@
calcined, heavy (bbls.)	lb.	.04¼	@
magnesium, carb., light (bags)	lb.	.08¼	@
Orange mineral A.A.A	lb.	.14	@
Rubber lead No. 4	lb.		@

Accelerators, Organic

Aldehyde ammonia	lb.	.82	@
Aniline (drums)	lb.	.16½	@ .17
B. B.	lb.	1.05	@ 1.07
Captax	lb.	1.20	@ 1.50
D. P. G. salt	lb.	.76	@
Di-ortho-tolylguanidine	lb.	1.05	@ 1.08
Diphenyl guanidine	lb.	.85	@ .88
Ethylidine aniline	lb.	.65	@
Excellerex	lb.	.35	@ .40
Formaldehyde aniline	lb.	.42½	@
Furac 1, 2 and 3	lb.		@
Grasselerator 102	lb.	.80	@ .85
552	lb.	4.80	@ 5.00
808	lb.	1.25	@ 1.50
Heptene	lb.	.55	@
Hexamethylene tetramine	lb.	.80	@ .85
Hydrofuramide	lb.		@
Methylene aniline	lb.		@
Methylene dianiline	lb.	.40	@
Monex	lb.	3.25	@
No. 999 lead oleate	lb.	.17	@ .18
Piperidine Penta-Dithio-Carb.	lb.	5.00	@
R. & H. 50 (100 lb. drums)		.60	@
Super-sulphur, No. 1	lb.	.50	@
No. 2	lb.	.18	@ .25
Tensilac No. 39	lb.	.65	@
No. 41	lb.	.65	@
Thionex	lb.	3.25	@
Thiocarbanilid	lb.	.22	@ .28
Trimene	lb.	.75	@
base	lb.	1.20	@ 1.35
Triphenylguanidine	lb.	.69	@
Tuads	lb.	3.25	@
Vulcanol	lb.	1.08	@
Vulcone	lb.	.74	@
Zimate	lb.	4.00	@

Acids

Acetic 28% (bbls.)	100 lb.	$3.50	@
glacial (carboys)	100 lb.	12.21	@
Oleic	lb.	.10	@ .10½
Stearic	lb.		@
Sulphuric, 66° (carboys) 100 lb.		1.60	@

Alkalies

Caustic soda	lb.	.04	@ .04¼
Sulphite soda	100 lbs.	3.50	@

Anti-Oxidants

Age-Rite	lb.	.85	@ .90
Antox	lb.	.83	@
V. G. B.	lb.	.66	@ .

Colors

BLACK

Bone	lb.	.05½	@ .11
Carbon (see Comp. Ing.)			
A. & W. nonfli No. 1	lb.	.40	@
No. 2	lb.	.25	@
Drop	lb.	.07½	@ .15
Lampblack	lb.	.10	@ .40

BLUE

A. & W. blue	lb.	1.25	@ 5.00
Du Pont, N.	100 lbs.	1.35	@
Marine, A. C.	100 lbs.	1.30	@
Prussian	lb.	.34	@ .35
Ultramarine	lb.	.09	@ .35

BROWN

Sienna, Italian	lb.	.06½	@ .07¼
Umber, Turkey	lb.	.05½	@ .06½

GREEN

A. & W. green	lb.	1.25	@ 3.00
Chrome, light	lb.	.36	@ .37
medium	lb.	.38	@ .40
dark	lb.	.40	@ .41
Du Pont, G. L.	100 lbs.	.30	@
Y. L.	100 lbs.	.75	@
Oxide of chromium	lb.	.38	@

ORANGE

Du Pont R. O.	100 lbs.	1.35	@
R. X.	100 lbs.	1.30	@
Y. O.	100 lbs.	1.60	@
Y. X.	100 lbs.	1.15	@

RED

A. & W. red	lb.	.75	@ 3.50
purple	lb.	2.00	@ 4.00
Antimony, golden, No. 1	lb.		@
golden 15/17%	lb.	.20	@ .22
T. K. "Special" 1%	lb.	.38	@ .40
Pentassulphide 15/17%	lb.	.16	@ .20

Colors—*(Continued)*

RED—*(Continued)*

Antimony, crimson	lb.	$0.16	@ $0.18
crimson, R M.P. No. 3	lb.	.48	@
T. K. 15/17%	lb.	.40	@ .42
Sulphur free	lb.	.50	@
7-A	lb.	.37	@
Z-2	lb.	.20	@
Sulphuret vermilion	lb.	.37½	@
Du Pont R. I.	100 lbs.	2.00	@
R. S.	100 lbs.	1.45	@
Brilliant A. C.	100 lbs.	1.20	@
Iron Oxides			
bright red pure domestic	lb.	.12	@
bright red pure English	lb.	.14	@ .15
bright red red. English	lb.	.10	@ .12
bright red red. domestic	lb.	.10	@
Indian (maroon), red pure domestic	lb.	.11	@
Indian (maroon), red pure English	lb.	.11	@ .13
Indian (maroon), red reduced English	lb.	.08	@ .10
Indian (maroon), red reduced domestic	lb.	.08	@
Oximony	lb.	.13¼	@
Spanish red oxide	lb.	.04	@
Venetian reds	lb.	.02½	@ .06
Vermilion, English quick-silver	lb.	1.55	@ 1.65

WHITE

Albalith	lb.		@
Lithopone	lb.	.05½	@ .05¾
Azolith	lb.	.05¾	@ .06⅛
Grasselli	lb.	.05⅝	@ .06⅛
Sterling	lb.	.05¾	@ .06⅛
Zinc Oxide			
AAA (lead free)	lb.	.07¼	@ .07¾
Azo (factory):			
ZZZ (lead free)	lb.	.07¼	@ .07¾
ZZ (5% leaded)	lb.	.06¾	@ .07⅜
Z (8% leaded)	lb.	.07⅛	@ .07⅜
French Process			
Green seal	lb.	.11⅜	@ .11⅝
Red seal	lb.	.10¼	@ .10⅝
White seal	lb.	.12⅜	@

Colors—(Continued)

WHITE—Continued

Leaded Brands			
Lehigh	lb.	$0.07½ @	$0.07¾
Standard	lb.	.06⅞ @	.07¾
Sterling	lb.	.07½ @	.07¾
Superior	lb.	.07¼ @	.07¾

YELLOW

A. & W. yellow	lb.	2.00 @	4.00
Arsenic	lb.	.48 @	
I. K. Sulphide	lb.	.70 @	
Chrome	lb.	.17½ @	.18½
Du Pont N	100 lbs.	4.00 @	
Grasselli cadmium	lb.	1.50 @	
Ochre, domestic	lb.	.02 @	
imported	lb.	.03½ @	.04
Oxide, pure	lb.	.09 @	
Zinc, imp.	lb.	.24 @	

Compounding Ingredients

Aluminum flake (sacks c.l.)	ton	21.85 @	
(sacks l.c.l.)	ton	24.50 @	
Filler	ton	@	
Silicate	ton	25.00 @	26.00
Ammonia carbonate	lb.	.14½ @	.17½
Asbestine	ton	13.50 @	14.50
Barium, varbonate	lb.	.03½ @	
dust	lb.	.05 @	.06
Barytes, imported	ton	30.00 @	
water ground and floated	ton	23.00 @	25.00
Basofor	lb.	.04½ @	
Blanc fixe, dry	ton	85.00 @	87.50
pulp	ton	62.00 @	65.00
Carbon Black			
Aerfloted arrow	lb.	.09 @	.13
Compressed	lb.	.08½ @	.12½
Uncompressed	lb.	.08 @	.12
Micronex	lb.	.09 @	.13
Carrara filler	lb.	.01½ @	
Catalpo (facty.)	lb.	.02 @	
Chalk	lb.	@	
Clay, blue rib. (c. l. fcty.)	ton		
Blue Ridge, dark	ton	9.00 @	
light	ton	12.00 @	
China	lb.	.01¾ @	.02½
Dixie	ton	15.00 @	
Langford	ton	12.00 @	
Mineral Flour (Florida)	ton	22.00 @	23.00
Para	ton	@	
Perfection	ton	16.00 @	
Suprex	ton	13.00 @	26.00
Cotton flock, black	lb.	.11 @	.12
light-colored	lb.	.12 @	
white	lb.	.14 @	.26
Cotton linters clean mill run	lb.	@	
Fossil flour	lb.	.02½ @	
Glue, high grade	lb.	@	
medium	lb.	@	
low grade	lb.	@	
Infusorial earth	lb.	.02½ @	
Mica, amber (fact'y)	lb.	.05 @	
Diamond	lb.	@	
Pumice stone, powd	lb.	@	

New York Quotations

October 25, 1926

Compounding Ingredients—(Continued)

Rotten stone (bbls.)	lb.	@	
Slate flour (fact'y c. l.)	ton	@	
Soap bark, cut	lb.	$0.10 @	$0.11
Soapstone	ton	15.00 @	22.00
Sodium bicarb	100 lbs.	3.00 @	
Starch, pcwd. corn			
Buffalo (bbls.)	100 lbs.	3.49 @	3.59
Buffalo (bags)	100 lbs.	3.22 @	3.32
Talc, domestic	ton	16.00 @	18.00
French	ton	18.00 @	22.00
Terra blanche	ton	25.00 @	30.00
Thermatomic carbon	lb.	.05 @	
Whiting:			
Commercial	100 lbs.	.85 @	1.00
English, cliffstone	100 lbs.	1.50 @	
Quaker	ton	13.00 @	
Snow white	ton	13.00 @	15.00
Sussex	ton	8.00 @	
Westminster Brand	100 lbs.	@	
Witco (c.l.) (fact'y)	ton	12.00 @	
Whiting, imp. chalk	100 lbs.	1.00 @	1.10
Paris White, Eng. Cliffstone,	100 lbs.	1.50 @	1.75
Wood flour	ton	@	
Pulp, XXX (fact'y)	ton	35.00 @	
X (fact'y)	ton	25.00 @	

Mineral Rubber

Genasco (facty.)	ton	50.00 @	52.00
Gilsonite (fact'y)	ton	37.14 @	39.65
Granulated M. R	ton	@	
Hydrocarbon, hard	ton	29.00 @	35.00
Hydrocarbon, soft	ton	29.00 @	35.00
Ohmlae Kapuk, M-R	ton	@	
K-4	ton	@	
320/340 m. p. hydrocarbon	ton	47.00 @	52.00
300/310 m. p. hydrocarbon	ton	42.00 @	47.00
Paradura (fact'y)	ton	70.00 @	72.50
Pioneer, M. R., solid (fac.)	ton	@	
M. R. granulated	ton	@	
Robertson, M. R. solid (facty.)	ton	35.00 @	75.00
M. R. gran. (facty.)	ton	42.00 @	80.00

Oils (Softeners)

Castor, No. 1, U. S. P.	lb.	.12¼ @	
No. 3, U. S. P.	lb.	.11¾ @	
Corn, crude (bbls.)	lb.	.10½ @	
Cotton, summer yellow	lb.	@	
Fluxrite fluid	lb.	.05 @	.06
solid	lb.	.05 @	.06
Glycerine	lb.	@	
Linseed, raw	lb.	@	
Liquid flux	lb.	.10 @	.12
Moldrite	lb.	@	
Palm lagos	lb.	.08¾ @	
niger	lb.	.08½ @	
Peanut, crude	lb.	.10½ @	
refined	lb.	.12 @	
Petrolatum, standard	lb.	.06 @	.08
sticky	lb.	.08 @	.10
Petroline	lb.	.04 @	
Pine, steam distilled	gal.	.73 @	
Plastone	lb	.39 @	
Rapeseed, refined	gal.	.84 @	
Rosin	gal.	.68 @	
Synthecite	lb.	.05 @	
Tar	gal.	.44 @	
Virol	lb.	.10 @	

Resins and Pitches

Pitch			
Coal tar	bbl.	@	
Pine tar, retort	bbl.	$19.00 @	
Ponto	lb.	@	
Rosin, K (bbl.)	280 lbs.	14.70 @	
strained (bbl.)	280 lbs.	13.50 @	
Shellac, fine orange	lb.	.70 @	
Tar, kiln	bbl.	17.00 @	

Solvents

Benzol (90%, 7.21 lbs. gal.) pure	gal.	.29 @	
Carbon bisulphide (10.81 lbs. gal.) 99.9% pure (drums)	lb.	.05½ @	.06¾
tetrachloride (13.28 lbs. gal.) 99.7% pure (drums)	lb.	.07½ @	.08
Gasoline			
No. 303			
Tankcars	gal.	@	
Drums, c. l.	gal.	@	
Drums, l. c. l.	gal.	@	
Naphtha			
68° Bé., 112°, 324°	gal.	.20 @	
70° Bé., 114°, 314°	gal.	.20½ @	
71° Bé., 112°, 304°	gal.	.21 @	
Turpentine, spirits	gal.	.96 @	
wood, steam distilled	gal.	.90 @	

Substitutes

Black	lb.	.08½ @	.14
Brown	lb.	.07 @	.15
White	lb.	.09 @	.17

Vulcanizing Ingredients

Sulphur chloride	lb.	.04 @	
refined velvet (c.l.)	100 lbs.	@	
(l.c.l.)	100 lbs.	@	
Soft rubber (c.l.)	100 lbs.	2.60 @	2.95
(l.c.l.)	100 lbs.	2.95 @	3.30
Superfine flour (c.l.)	100 lbs.	@	
(l.c.l.)	100 lbs.	@	
Tire brand, superfine	100 lbs.	2.20 @	2.55
Tube brand, velvet	100 lbs.	2.60 @	2.95

(See also Colors—Antimony)

Waxes

Wax, beeswax, white, com.	lb.	.55 @	
carnauba	lb.	.38 @	.80
ceresine white	lb.	.13 @	
montan	lb.	.07 @	.07½
ozokerite, black	lb.	.30 @	
green	lb.	.32 @	

Paraffin

122/124 white crude scale	lb.	.05½ @	.05¾
124/126 white crude scale	lb.	.05¼ @	
123/125 fully refined	lb.	.06½ @	
125/127 fully refined	lb.	.06½ @	.06¾

RUBBERLENE

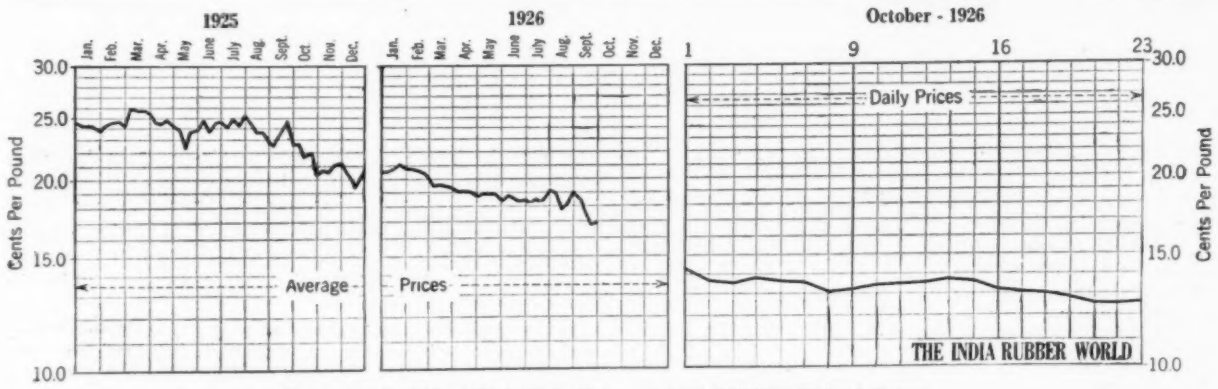
Rubberlene is a crystal-white super-refined petroleum product, quick drying and free from oily residue. It is used as a solvent in the manufacture of cements. In the rubber-dipping process it can be substituted for carbon bisulphide. The initial boiling point of Rubberlene is from 145 to 155 degrees F. and its maximum boiling point is under 300 degrees F. Its initial boiling point being 40 to 45 degrees above that of ordinary naphtha there is practically no loss of the solvent when it is used in cement mixing.

TRIPOLI

Tripoli or infusorial silica is found in commercially valuable quantities only in the neighborhood of Seneca, Missouri, although there are numerous somewhat similar deposits in several southern states. About 60 per cent of the production of tripoli is used in the manufacture of foundry partings. The next largest use is in buffing compositions which require about 30 per cent of its production. The remaining 10 per cent is used for a large variety of purposes one of which is as a filling material in hard rubber compositions. In this connection absorption makes a characteristically close bond with the other ingredients without the addition of undue weight. Its specific gravity is variously reported at from 2.15 to 2.41. The porosity of the crude stone is 45 per cent and that of the powdered material from 63 to 68 per cent. The crude stone has an absorption of 38 per cent and the powder 52 to 53 per cent.

VULCANEX

Vulcanex embodies the result of long research for the production of a resinous type of accelerator. It resembles Vulcone in physical appearance but has one-third greater activity. A mixing containing 3.0 per cent zinc oxide, 3.5 per cent sulphur, 0.25 per cent Vulcanex and the balance high grade plantation rubber is correctly vulcanized in from 20 to 25 minutes at 40 pounds steam pressure. It will show about 3,000 pounds tensile test. Vulcanex is intermediate in activity between the older resinous accelerators and the semi-ultra accelerators. It has very little tendency to cause scorching and is particularly effective in hard rubber stocks. In low and medium grade mechanical mixings Vulcanex gives a soft and rubbery consistency to the goods.



Ratio Graph of New York Daily Prices of Spot Middling Upland Cotton

The Market for Cotton and Fabrics

New York

AMERICAN COTTON. The chief feature of the cotton market for the past month was the sensational drop in the price of spot middlings from the 15 cent level of the last of September to 12.45 cents October 26. This decline was due to the estimates of heavy yields indicated by the government crop condition reports. The report of October 8 indicated 16,627,000 bales and sent the market price below the cost of production. The report of October 25 advanced the yield to 17,454,000 bales. This is the largest crop in the history of the cotton industry. If conditions continue favorable in several of the cotton states this total may be increased in the report due November 8. The economic situation created caused President Coolidge to appoint a cotton commission to cooperate with southern organizations to formulate a plan of financing the crop. The plan proposed contemplates withdrawal from the market of 4,000,000 bales for a period of 18 months; the orderly marketing of the remainder; and 25 per cent reduction in the cotton acreage.

EGYPTIAN COTTON. There was a sharp drop in staple premiums about the middle of October particularly in Egyptians. Staples are now within 1 or 2 cents of a basis which previous to 1914 was considered reasonable. It is fair to assume, therefore, that spinners would be justified in covering at least a portion of their requirements. Medium sakels at 25 cents and medium uppers at 19 cents are far below the prices ruling since 1920. Pimas at 35 cents are on a relatively higher basis. They are recognized as superior to sakel and should command a premium. It is reported from Cairo that the Egyptian Cabinet will issue a decree limiting the increase of cotton acreage to two-thirds the present area for three years.

Cotton Fabrics

DUCKS, DRILLS AND OSNABURGS. The outstanding market features of the past month were that fabrics are now cheaper to the consumer than since 1921; the very low inventories in cotton fabrics; and an increasingly sharp demand for spot merchandise.

RAINCOAT FABRICS. Fabrics of all grades for weather proofed goods are very active. Rubberizers are very busy and no reduction of operating schedules is anticipated until after January 1, 1927.

SHEETINGS. Buying is still inactive. Interest centered in the government report of October 25. Many concerns need goods for later shipment but hesitate to purchase as they expect lower prices will come. Many numbers of sheetings are difficult to find for spot delivery owing probably to curtailment of manufacture by the mills. The output of cotton cloth fell 18,000,000 yards in September compared with the August output.

TIRE FABRICS. Inquiries and sales were well maintained in October. Contracts closed from the 1st to the 25th were estimated at about 15,000,000 pounds. Sales of tire fabric for the first 8 months of this year were reported 98,136,452 pounds. Tire manufacturing companies have now covered their fabric needs for the first half of 1927.

New York Quotations

October 25, 1926

Drills		
38-inch 2.00-yard	.....yard	$0.16 @
40-inch 3.47-yard	.....	.09¼ @
52-inch 1.90-yard	.....	.17½ @
60-inch 1.52-yard	.....	.21½ @
Ducks		
38-inch 2.00-yard	.....yard	.15¾ @
40-inch 1.47-yard	.....	.21½ @
72-inch 16.66-ounce	.....	.32½ @
72-inch 17.21-ounce	.....	.33½ @
MECHANICAL		
Hose and belting	....pound	.28 @
Specials	.....	.32 @
TENNIS		
52-inch 1.35-yard	.....yard	25¾ @
Hollands		
DEAD FINISH		
Standard, 36-inch	.....yard	.19½ @
42-inch	.....	.23½ @
FLAT FINISH		
Imperial, 36-inch	.....	.15½ @
40-inch	.....	.17¼ @
RED SEAL		
36-inch	.....	.16 @
40-inch	.....	.16½ @
50-inch	.....	25 @
GOLD SEAL		
40-inch	.....	23 @

Osnaburgs		
40-inch 2.35-yard	.....yard	$0.13½ @
40-inch 2.48-yard	.....	.12½ @
40-inch 3.00-yard	.....	.10½ @
37-inch 2.42-yard	.....	.12⅞ @
Raincoat Fabrics		
COTTON		
Bombazine 64 x 60	....yard	.11¾ @
Bombazine 60 x 48	.....	.10¾ @
Plaids 60 x 48	.....	.11½ @
Plaids 48 x 48	.....	.10½ @
Surface prints 60 x 48	....	.11¾ @
Surface prints 64 x 60	.....	.13 @
Sheetings, 40-inch		
48 x 48, 2.50-yard	.....yard	.12 @
48 x 48, 2.85-yard	.....	.10½ @ .10¼
64 x 68, 3.15-yard	.....	.11¼ @ .11½
56 x 60, 3.60-yard	.....	.09¼ @ .09½
48 x 44 3.75-yard	.....	.08⅛ @ .08⅜
Sheetings, 36-inch		
48 x 48, 3.00-yard	.....yard	.06¾ @
40 x 40, 6.15-yard	.....	.05⅛ @ .05⅜

Tire Fabrics		
SQUARE WOVEN 17¼-ounce		
Egyptian, karded	.....pound	$0.46 @$0.48
Peeler, karded	.....	.38 @ .40
CORD 23/5/3		
Egyptian, combed	....pound	.52 @ .54
Egyptian, karded	.....	.46 @ .48
Peeler karded, 1 1/32-in.	.....	.39 @ .40
CORD 23/4/3		
Peeler, karded	.....pound	.39 @ .40
CORD 23/3/3		
Peeler, karded	.....pound	@
CORD 15/3/3		
Peeler, karded	.....pound	.35 @ .36
CORD 13/3/3		
Peeler, karded	.....pound	.36 @ .38
LENO BREAKER		
8-oz. Peeler, karded	....pound	.39 @ .40
10-oz. Peeler, karded	.....	.38 @ .40
CHAFER		
8.25-oz. Peeler, karded (2 ply)	.....pound	.35 @ .36
9.5-oz. Peeler, karded (4-ply)		.39 @ .41
12-oz. Peeler, karded	.....	.39 @ .40
14-oz. Peeler, karded	.....	.39 @ .40

The Cotton Outlook

Cotton to Receive Government Assistance

GOVERNMENT aid is being enlisted in the difficulties at present confronting the cotton industry, and definite plans for relief have been under consideration during a two-day session held October 18 and 19 by representatives of the American Cotton Growers' Exchange and the committee previously appointed by President Coolidge to inquire into the cotton troubles of the southern states. The members of this committee include: Eugene Meyer, chairman, formerly chairman of the War Finance Corporation; Secretary of the Treasury Mellon; Secretary of Agriculture Jardine; Secretary of Commerce Hoover; Commissioner Williams of the Farm Loan Board; and George R. James of the Federal Reserve Board. At the conference the following measures were under discussion: the withdrawal from commerce of 4,000,000 bales of 1926 cotton; the formation of financial institutions in the cotton states to raise a fund of $60,000,000 to safeguard the proposed government investment of a total of $180,000,000; and the curtailment of 1927 acreage to the extent of 33⅓ per cent.

Following the meeting, a government statement was authorized, this being in part:

At conferences yesterday and today with a committee representing the cotton cooperative marketing associations of the South, the progress of the cooperative movement, and the possibility of enlarging its usefulness in handling the present cotton surplus were fully discussed. The committee reported that the associations handled approximately 1,500,000 bales last year and have the forces and facilities for storing and handling a much larger quantity this year. The Government, through its various agencies, stands ready to lend all possible assistance in furthering the development of the cooperative marketing principle in the present situation.

The President's committee is now considering whether it may not be advisable to bring about the formation, at central points in southern states, of some additional financing machinery suitable to the present unusual conditions.

It was also agreed by the committee that Mr. Meyer should visit leading points in the South for the purpose of studying conditions on the ground and conferring with representative men in the various states who are in touch with the growing, warehousing, financing, and marketing of cotton.

Cotton Conditions Variously Regarded

Meanwhile more hopefulness in connection with the industry is becoming apparent, and with it some of the old-time activity. Prices were reported on October 17 as recovering 145 points, or not far from $7.50 a bale, the rally said to have been brought about partly by the increased demand for both spots and contracts attracted by the low level to which prices had fallen. Probably, however, the greatest stimulus to price recovery was the appointment of the above-mentioned government committee and the prospects of stabilization of the market. It also became known that as a result of the low prices there had been heavy buying of cotton in the interior with storage in privately owned warehouses, the cotton to be held until there was an improvement in prices.

Secretary Hoover believes that the spirit of the new South is shown in the energetic way in which it has organized in order to meet its cotton problem; that it will overcome this problem and teach the rest of the country how to regulate planting. Secretary Jardine has also published a statement, from which the following is quoted in part:

The present situation is very largely due to panic conditions, which, it is to be hoped, are only temporary. The basic economic conditions of the country are sound and cotton producers must soon realize that the intrinsic value of this crop has not changed in these last few weeks.

The people of the world need all the cotton that we can produce. We are in a position to supply their needs in an orderly manner. Cotton is not a perishable commodity. We have the necessary facilities for storing the crop for months or, if need be, for years, and ample credit to carry it. Cotton in storage is probably the soundest basis for credit that we know.

I am glad to note the evidences that these facts are rapidly gaining general recognition throughout the South. It is my earnest hope that the present stampede may be checked while the major part of the crop remains in the hands of the farmers.

Colonel H. G. Hester, secretary of the New Orleans Cotton Exchange, says:

The promised supply of cotton is not unwieldy. It is not too great to be handled in the regular channels of trade. The world wants, and needs, our cotton, and at 15 cents it would easily absorb 17,000,000 to 20,000,000 bales if the latter could be obtained as it did 15,000,000 bales at nearly 19 cents last year.

The real facts of the situation may be reasonably put as follows: Situation in the United States—carryover in the United States July 31, 1926, including linters, 3,684,000. Government estimate of the 1926-27 crop—October 1, lint cotton, 16,627,000. Linter crop probable, 1,000,000. City crop repacks, etc., 250,000.

It is too early, even if I were willing to do so, to hazard a prediction concerning the world's consumption of our cotton. We know, however, that the highest annual consumption within the past fourteen years was, in America, 7,400,000 bales, and in foreign countries 9,300,000 bales, or, say, together 16,700,000 bales, and that it is within the bounds of possibility that 16,000,000 or more may be reached this season.

The New York Times expresses its opinion in an editorial entitled "Cotton and Rubber":

Not long ago our Government was greatly exercised by the artificially high price of rubber which this country had to import. Just now it is engaged in doing everything within its power to keep up the price of cotton which foreign nations have to buy from us. The administration at Washington takes pride in pointing to the fact that it has arranged a credit of $30,000,000 for cotton planters, to enable them to hold the crop off the market and so raise the export price. As the United States produces more than half of the cotton of the whole world, this would look like the very thing which Secretary Hoover so strongly condemned, namely, Government activity to increase the cost to foreigners of an essential raw material. As our exports of cotton run above $1,000,000,000 annually, it is easy to see that we are preparing to make the cotton bill of European countries higher by means of Government aid than our rubber bill was made for us.

Alston H. Garside, director of *Cotton Service*, Merchants' National Bank of Boston, said in part:

The price of cotton will be determined not only by the number of bales in the carryover and new crop but also by the need of the South to sell or its ability to hold; not only by the current rate of consumption but also by the confidence or lack of confidence of users in the future course of business and future rate of consumption; not only by the confidence or lack of confidence of merchants, manufacturers, investors and speculators in the current price level but also by their ability to secure credit to put their ideas into effect. Within twelve months from August, 1921, the cotton market advanced to 23 cents. What will it do in the coming year?

Cotton Textile Institute Organized

On October 20 at a meeting at the Biltmore Hotel, New York, N. Y., cotton manufacturers from twenty states took the final steps in the organization of the long-discussed Cotton Textile Institute. The following executives were chosen: former United States Senator Henry F. Lippitt, chairman of the board of directors; Stuart W. Cramer and Robert Amory, vice presidents; Gerrish H. Milliken, treasurer; and George A. Sloan, secretary. Until the office of president has been filled, Mr. Sloan will, under the direction of the executive committee, carry forward the activities of the organization. In the directorate of the Institute are listed the names of a number of tire fabric manufacturers.

REPORT OF RIMS INSPECTED AND APPROVED BY THE TIRE AND RIM ASSOCIATION OF AMERICA, INC.

Rim Size	September, 1926 Number	September, 1926 Per Cent	Nine Months, 1926 Number	Nine Months, 1926 Per Cent
Motorcycle Rims				
24 x 3	1,718	0.1	19,833	0.1
26 x 3	8,606	0.4	72,373	0.4
28 x 3	.....	....	2,952	0.0
Clincher Rims				
30 x 3	.....	....	2,302	0.0
30 x 3½	183,859	7.7	2,233,980	11.5
31 x 4	10,189	0.4	44,005	0.2
Balloon Rims				
25 x 3½	.....	....	722	0.0
26 x 3½	9,235	0.4	195,917	1.0
27 x 3½	.....	....	4,041	0.0
28 x 3½	1,023,683	43.3	8,348,898	41.6
29 x 3½	50	0.0	254	0.0
26 x 4	18,996	0.8	40,063	0.2
27 x 4	243	0.0	335	0.0
28 x 4	270,834	11.4	3,215,545	16.7
29 x 4	240,693	10.2	1,661,753	8.3
30 x 4	1,518	0.1	9,408	0.0
27 x 4½	4,229	0.2	7,116	0.0
28 x 4½	25	0.0	25	0.0
29 x 4½	19,337	0.8	304,110	1.5
30 x 4½	231,519	9.8	1,417,103	7.1
31 x 4½	1,082	0.0	30,535	0.1
30 x 5	23,745	1.0	220,161	1.1
31 x 5	42,669	1.8	360,126	1.2
33 x 6	21,554	0.9	119,668	1.0
High Pressure Rims				
30 x 3½	30,929	1.3	142,564	0.7
32 x 3½	3,538	0.2	12,102	0.1
31 x 4	6,151	0.3	16,654	0.1
32 x 4	9,900	0.4	148,193	0.7
33 x 4	2,853	0.1	13,853	0.1
34 x 4	.....	....	54	0.0
32 x 4½	32,550	1.4	343,860	1.2
33 x 4½	491	0.0	1,510	0.0
34 x 4½	1,616	0.1	24,511	0.1
36 x 4½	.....	....	.....	....
Truck, 20-inch				
30 x 5	117,464	5.0	705,511	3.5
32 x 6	21,683	0.9	162,757	0.8
34 x 7	12,208	0.5	47,257	0.2
36 x 8	1,919	0.1	9,523	0.0
40 x 10	.....	....	468	0.0
Truck, 24-inch				
34 x 5	2,000	0.1	38,334	0.2
36 x 6	6,813	0.3	62,446	0.3
38 x 7	497	0.0	2,299	0.0
40 x 8	511	0.0	8,498	0.0
44 x 10	.....	....	857	0.0
36 x 7	611	0.0	1,797	0.0
Total	2,365,518	100.0	20,054,273	100.0

September, 1926	Per Cent	Nine Months, 1926	Per Cent
Motorcycle	0.5	Motorcycle	05
Clinchers	8.1	Clinchers	11.7
Balloons	80.7	Balloons	79.8
High Pressure	3.8	High Pressure	3.0
Truck—20-inch	6.5	Truck—20-inch	4.5
Truck—24-inch	0.4	Truck—24-inch	0.5

Metal Market Review

New York

During the last of October some of the markets showed downward price tendencies, particularly lead, with several decided reductions; tin and zinc also falling off in values. The seasonal slowing down of the steel industry is said to have caused weakness in some of the other metal markets.

ALUMINUM. Prices remained unchanged. Aluminum producers are anticipating an increase in aeronautical construction which, they believe, is not far distant.

ANTIMONY. The market for this metal has strengthened, while prices in China are much higher, due to comparatively small stocks of the metal.

COPPER. The copper market shows comparatively little change, although the announcement of the formation of Copper Exporters, Inc., had temporarily a stimulating effect. This new export association will hold meetings at stated intervals in Brussels, Belgium, while the general basing point for copper exports is said to be Hamburg, Germany. The world consumption of copper during the first half of the present year totaled, according to the American Bureau of Metal Statistics, 754,000 metric tons, while the revised total for the twelve months ended December 31, 1925, was 1,512,300 tons. The share utilized by the United States in the six months' period was 402,700 tons.

LEAD. Orders of late have been chiefly for November shipments, and the market is moderately active. The latest price reduction made by the American Smelting & Refining Co. brings the new quotation to 8.35 cents, New York, a reduction of $3 a ton.

STEEL. Authorities in the steel industry claim that the present slight retrogression is only normal, after a summer of unusual activity. According to the American Iron and Steel Institute, the production of steel ingots in September amounted to 3,930,675 tons as compared with 4,004,583 in August and with 3,489,565 tons in September, 1925.

TIN. During the middle of October a new high level of 72 cents was reached, the prices for this metal later becoming somewhat irregular. It is said that the United States consumes 60 per cent or more of the world's production of tin.

ZINC. Zinc is stronger, and world conditions in this metal still remain satisfactory, although they would improve with the settlement of the British coal strike, and the consequent increase in consumption.

Basic Metals

October 21, 1926

	Cents per pound	
Aluminum, virgin, 98@99 per cent	27.00 @	
Antimony	14.25 @	
Copper—Lake, spot	14.25 @	
Electrolytic, spot	14.075 @	14.125
Castings, refinery	13.75 @	
Lead, spot, New York	8.30 @	8.35
Lead, spot, East St. Louis	8.00 @	8.025
Nickel, ingot, pound	35.00 @	
Tin, spot	69.125 @	
Zinc, spot, New York	7.62½@	
Zinc, spot, East St. Louis	7.27½@	

Steel Wire

	Base per 100 lbs.
Bright, plain wire No. 9 gage	$2.50 @
Annealed fence wire	2.65 @
Galvanized wire No. 9	3.10 @
Spring wire	3.50 @

Copper Wire

BASE PRICE F. O. B. FACTORY

	Cents per pound
Bare copper wire	16.25 @
No. 6 B. & S. gage	16.25 @
No. 8 B. & S. gage	16.25 @
No. 14 B. & S.	17.25 @

JAVA'S CRUDE RUBBER SHIPMENTS, ACCORDING TO CABLED REPORTS, advanced in value from 80,680,000 florins ($30,658,400) in 1924 to a total for 1925 of 142,190,000 florins ($56,876,000).

United Kingdom Rubber Statistics

Imports

UNMANUFACTURED Crude Rubber From—	August, 1926 Pounds	August, 1926 Value	Eight Months Ended August, 1926 Pounds	Eight Months Ended August, 1926 Value
Straits Settlements	12,332,800	£1,003,225	85,010,000	£9,652,888
Federated Malay States	4,458,600	362,550	38,331,200	4,210,820
British India	850,600	69,335	7,683,400	937,369
Ceylon and Dependencies	3,391,400	296,019	27,679,900	3,121,264
Other Dutch possessions in Indian Seas	1,013,600	83,945	12,024,400	1,306,937
Dutch East Indies (except other Dutch possessions in Indian Seas)	2,782,900	233,173	19,615,700	2,113,275
Other countries in East Indies and Pacific, not elsewhere specified	147,800	12,490	1,281,400	143,985
Brazil	942,100	66,691	7,107,600	791,967
Peru	300	20	99,300	8,356
South and Central America (except Brazil and Peru)	100,000	8,516	316,700	29,842
West Africa:				
French West Africa	24,300	1,169	1,345,600	119,759
Gold Coast	101,000	5,874	744,600	52,152
Other parts of West Africa	90,400	6,773	1,177,600	117,596
East Africa, including Madagascar	173,000	12,089	1,000,400	103,143
Other countries	78,300	5,829	1,021,500	125,506
Totals	26,667,100	£2,167,698	204,439,300	£22,834,829
Waste and reclaimed rubber	587,000	£4,471	4,679,800	£82,035
Gutta percha and balata	797,300	85,060	5,759,800	751,376
Rubber substitutes	62,000	3,882	135,900	7,935
Totals	1,446,300	£93,413	10,575,500	£841,346
MANUFACTURED				
Boots and shoes....*doz. pairs*	40,433	£123,653	312,075	£685,401
Tires and tubes				
Pneumatic				
Outer covers	.....	244,670	.....	2,649,322
Inner tubes	.....	42,562	.....	439,119
Solid tires	.....	29,415	.....	214,408
Other rubber manufactures	.....	112,795	.....	1,097,291
Totals	.....	£553,095	.....	£5,085,541

Exports

UNMANUFACTURED				
Waste and reclaimed rubber	1,355,100	£20,758	15,197,700	£204,502
Rubber substitutes	75,800	1,870	664,200	15,269
Totals	1,430,900	£22,628	15,861,900	£219,771
MANUFACTURED				
Boots and shoes....*doz. pairs*	18,918	£33,768	153,617	£245,767
Tires and tubes				
Pneumatic				
Outer covers	.....	258,622	.....	2,241,376
Inner tubes	.....	49,556	.....	470,014
Solid tires	.....	34,920	.....	297,971
Other rubber manufactures	.....	267,356	.....	2,056,934
Totals	.....	£644,222	.....	£5,312,062

Exports—Colonial and Foreign

UNMANUFACTURED Crude Rubber From—	August, 1926 Pounds	August, 1926 Value	Eight Months Ended August, 1926 Pounds	Eight Months Ended August, 1926 Value
Russia	1,467,200	£231,606	9,362,500	£1,678,810
Sweden, Norway and Denmark	156,900	16,601	1,528,700	202,174
Germany	1,252,700	104,542	8,413,300	984,007
Belgium	395,200	33,531	1,964,300	228,852
France	1,642,900	123,942	15,253,600	1,969,235
Spain	17,300	2,181	515,400	78,545
Italy	33,200	2,729	4,875,300	714,824
Other European countries	377,200	32,793	1,259,400	154,146
United States	4,761,900	397,272	39,599,500	5,605,477
Canada	.....	.....	256,900	42,576
Other countries	148,600	13,726	574,500	79,774
Totals	10,254,100	£958,923	83,603,400	£11,738,420
Waste and reclaimed rubber	5,400	£130	178,800	£5,010
Gutta percha and balata	15,700	2,291	426,000	32,771
Rubber substitutes	.....	.....	2,200	60
Totals	21,100	£2,411	407,000	£37,841
MANUFACTURED				
Boots and shoes....*doz. pairs*	456	£1,175	5,057	£13,998
Tires and tubes				
Pneumatic				
Outer covers	.....	27,644	.....	258,075
Inner tubes	.....	3,566	.....	39,128
Solid tires	.....	734	.....	11,298
Other rubber manufactures	.....	8,016	.....	52,900
Totals	.....	£41,135	.....	£375,399

Dominion of Canada Rubber Statistics

Imports of Crude and Manufactured Rubber

UNMANUFACTURED	July, 1926 Pounds	July, 1926 Value	Four Months Ended July, 1926 Pounds	Four Months Ended July, 1926 Value
Rubber, gutta percha, etc.				
From United States	3,366,750	$1,534,551	11,535,899	$5,927,222
Straits Settlements	106,815	46,045	888,506	462,773
Dutch East Indies	3,984	1,703	117,332	70,770
Other countries	.....	.....	11,200	15,600
Totals	3,477,549	$1,582,299	12,552,937	$6,476,365
Rubber, recovered	542,477	$68,645	2,373,244	$305,805
Rubber, powdered and rubber or gutta percha scrap	558,968	27,692	2,666,445	149,553
Balata	629	502	3,206	2,361
Rubber substitutes	121,763	16,150	276,598	30,114
Totals	1,228,837	$112,989	5,319,493	$487,833
PARTLY MANUFACTURED				
Hard rubber sheets and rods	16,748	$8,220	45,211	$25,560
Hard rubber tubes	.....	.....	.....	2,170
Rubber thread not covered	8,007	13,925	39,311	66,795
Totals	24,755	$22,145	84,522	$94,525
MANUFACTURED				
Belting	.....	$20,235	.....	$78,765
Hose	.....	14,116	.....	69,514
Packing	.....	3,192	.....	16,906
Boots and shoes.....*pairs*	2,070	3,138	7,672	10,964
Clothing, including waterproofed	.....	15,795	.....	83,928
Gloves	.....	1,535	.....	7,117
Hot water bottles	.....	1,143	.....	3,268
Tires, solid.....*number*	80	5,645	327	18,027
Tires, pneumatic.....*number*	5,709	25,852	23,360	103,352
Tires, tubes.....*number*	516	1,281	5,693	14,285
Elastic, round or flat	.....	16,968	.....	62,572
Mats and matting	.....	3,754	.....	13,493
Cement	.....	6,456	.....	29,292
Golf balls.....*dozen*	6,142	25,741	26,518	106,420
Heels, rubber.....*pairs*	15,807	1,460	80,775	5,916
Other rubber manufactures	.....	125,013	.....	488,605
Totals	.....	$271,324	.....	$1,112,424
Totals, rubber imports	.....	$1,988,757	.....	$8,171,147

Exports of Domestic and Foreign Rubber Goods

UNMANUFACTURED	July, 1926 Produce of Canada Value	July, 1926 Re-exports of Foreign Goods Value	Four Months Ended July, 1926 Produce of Canada Value	Four Months Ended July, 1926 Re-exports of Foreign goods Value
Crude and waste rubber	$19,679	.....	$82,673	.....
Totals	$19,679	.....	$82,673	.....
MANUFACTURED				
Belting	53,766	.....	180,115	.....
Canvas shoes with rubber soles	365,465	.....	1,268,584	.....
Boots and shoes	258,666	.....	555,634	.....
Clothing, including waterproofed	530	.....	9,691	.....
Hose	19,685	.....	82,960	.....
Tires, casings	1,114,181	.....	4,640,512	.....
Inner tubes	152,270	.....	838,507	.....
Solid	17,541	.....	79,688	.....
Other rubber manufactures	42,457	$11,471	182,454	$52,720
Totals	$2,024,561	$11,471	$7,838,145	$52,720
Totals, rubber exports	$2,044,240	$11,471	$7,920,818	$52,720

Landings, Deliveries and Stocks in London and Liverpool as Returned by the Warehouses and Wharves During the Month of August, 1926

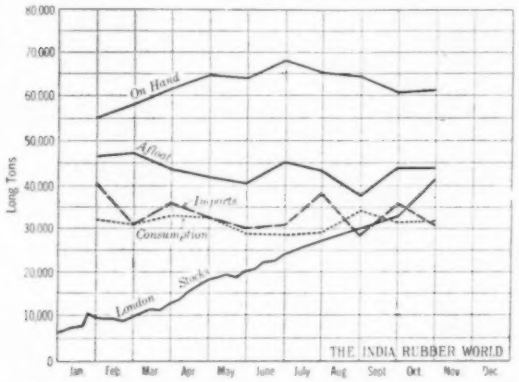
	Landed for August	Delivered for August	Stocks, August 31st		
LONDON	Tons	Tons	1926 Tons	1925 Tons	1924 Tons
Plantation	8,262	5,841	29,925	4,452	49,511
Other grades	10	15	167	8	109
LIVERPOOL					
Plantation	†355	†326	†1,219	†231	†4,006
Pará and Peruvian	155	155	372	238	384
Other grades	....	....	....	19	208
Total tons, London and Liverpool	8,782	6,337	31,683	4,948	54,218

†Official returns from the six recognized public warehouses.

Rubber Imports, Consumption and Stocks

The graph below covers the rubber supply and consumption for the current year including estimated figures for October.

Stocks of crude rubber in the United States from July 1 to September 1 declined an average of 1,000 tons monthly. In October they increased 1,100 tons. September consumption fell off about 2,000 tons. These differences correspond roughly to the



U. S. Crude Rubber Imports, Consumption and Stocks

increased demand for reclaims as there has been no apparent diminution in rubber goods production.

London stocks increased 5,906 tons between September 18 and October 23 when it was 41,800 tons. This is a greater gain than is shown by any of the other items charted.

Stocks afloat to the United States are estimated at 43,465 tons for October. These represent September shipments from the Far East and are about 6,000 tons above those of August. The curve

United States Crude Rubber Imports, Consumption and Stocks

1925	Imports Tons	Consumption Tons	Stocks On Hand† Tons	Stocks Afloat† Tons	London Tons	Singapore and Penang Tons
Twelve months ...	388,000	385,000	51,000*	48,000*	.....	.....
1926						
January	40,500	32,000	55,000	46,300	10,100	15,726†
February	31,000	31,000	58,000	47,000	9,100	13,653
March	36,000	33,000	61,500	43,500	12,800	18,389
April	32,700	32,500	64,400	41,900	18,500	16,328
May	30,000	29,000	64,000	40,300	20,200	16,848
June	30,000	28,600	60,460	40,907	23,800	19,400
July	38,000	27,600	65,000	43,000	27,857	23,000
August	27,800	34,500	64,000	37,400	30,159	23,362
Sept.	36,800	32,900	61,000	44,000	36,065	.....
Oct. (estimated)..	31,300	33,000	62,100	43,465	‡41,080	.....

*December 31, 1925.
†The first of each month.
‡October 23, 1926.

of consumption shows a gain corresponding approximately to the decline of stocks on hand. London stocks continue to advance at a steady rate and are now not far from 40,000 tons.

The gain in imports for September and October is due to the maintenance of tire production at high levels for September and October. It falls short only of the peak imports so far this year in January and July.

The curve of crude rubber consumption estimated for October corresponds with the actual figures for September and corresponds approximately with those for October imports.

United States Rubber Statistics

Imports of Crude and Manufactured Rubber

	July, 1926 Pounds	July, 1926 Value	Seven Months Ended July, 1926 Pounds	Seven Months Ended July, 1926 Value
UNMANUFACTURED—*Free*				
Crude rubber	80,237,927	$33,061,470	543,071,942	$355,049,752
Balata	35,606	20,552	385,022	159,588
Jelutong or Pontianak	1,464,903	261,991	9,518,532	1,795,806
Gutta percha	193,490	37,730	1,735,451	357,640
Guayule	820,420	204,028	6,385,706	1,764,565
Rubber scrap	1,721,840	76,349	21,147,154	1,006,076
Totals	84,474,186	$33,662,120	582,243,807	$360,133,427
Chicle ..... *dutiable*	402,896	$187,538	8,377,280	$4,158,497
MANUFACTURED—*dutiable*				
Rubber belting	36,725	$27,466	432,053	$298,245
Rubber tires	144	1,175	3,233	42,690
Other rubber manufactures of substitutes for rubber	.....	94,095	.....	748,028
Totals	36,869	$122,736	435,286	$1,088,963

Exports of Foreign Merchandise

RUBBER AND MANUFACTURES				
Crude rubber	3,480,930	$1,743,854	22,766,388	$15,042,058
Balata	18,785	9,175	335,612	191,315
Gutta percha and rubber substitutes and scrap	150	110	101,917	27,653
Rubber manufactures	.....	22,982	.....	59,881
Totals	.....	$1,776,121	.....	$15,320,907

Exports of Domestic Merchandise

MANUFACTURED				
India rubber				
Reclaimed	656,706	$82,733	6,614,159	$822,644
Scrap and old	2,702,850	142,495	16,085,034	1,023,642
Footwear				
Boots ..... *pairs*	89,616	201,354	348,881	907,317
Shoes ..... *pairs*	184,633	159,394	675,669	590,479
Canvas shoes with rubber soles ..... *pairs*	630,097	443,492	3,264,556	2,509,823
Rubber water bottles and fountain syringes ..... *number*	27,118	21,621	122,123	89,982
Rubber gloves .... *doz. pairs*	4,966	20,694	37,918	144,169
Other druggists' rubber sundries ..... *number*	.....	47,541	.....	327,656
Bathing caps ..... *dozen*	15,446	37,961	128,408	281,888
Hard rubber goods				
Electrical hard rubber goods	53,168	14,408	395,784	149,720
Other hard rubber goods	.....	32,830	.....	238,546
Tires				
Casings, automobile. *number*	118,435	2,001,266	850,760	15,082,773
Tubes, automobile. *number*	98,337	262,171	680,453	1,922,881
Other casings and tubes, *number*	5,517	15,801	49,298	160,582
Solid tires for automobiles and motor trucks. *number*	6,157	243,278	62,677	2,290,920
Others	168,504	59,443	946,339	329,867
Tire accessories	.....	140,289	.....	969,083
Rubber and friction tape	117,019	38,972	579,708	190,556
Belting	296,893	193,757	2,327,010	1,565,329
Hose	595,148	250,736	3,863,134	1,612,659
Packing	199,320	100,795	1,257,994	649,126
Soles and heels	373,788	113,443	2,341,955	753,711
Thread	70,530	90,983	956,748	1,296,939
Rubber bands and erasers	60,111	51,198	359,748	294,261
Other rubber manufactures	.....	219,467	.....	1,445,534
Totals	.....	$4,986,122	.....	$35,650,087
Rubber toys, balls and balloons	.....	$70,573	.....	$475,064

United States Crude and Waste Rubber Imports for 1926 (By Months)

	Plantations	Parás	Africans	Centrals	Guayule	Manicobas and Matto Grosso	Total 1926	Total 1925	Balata	Miscellaneous	Waste
January ..... *tons*	36,372	856	791	515	153	10	38,697	29,960	94	607	1,227
February	31,832	1,548	227	250	204	6	34,067	23,456	19	728	729
March	40,177	1,426	334	256	482	2	42,677	33,914	30	1,264	324
April	30,766	854	164	392	494	8	32,678	27,231	35	864	216
May	27,915	1,431	199	449	417	..	30,411	36,889	52	932	173
June	27,915	960	246	568	418	..	30,107	30,337	41	1,076	208
July	35,537	800	36	419	295	..	37,087	33,918	10	1,141	372
August	24,431	640	175	496	240	..	25,982	31,584	40	840	1,033
September	36,030	1,098	362	416	226	..	38,132	27,071	43	1,075	235
Totals, 9 months, 1926. *tons*	290,975	9,613	2,534	3,761	2,929	26	309,838	.....	364	8,527	4,517
Totals, 9 months, 1925	256,244	11,150	2,193	2,231	2,383	159	.....	274,360	332	8,478	2,358

Compiled from statistics supplied by the Rubber Association of America, Inc.

Crude Rubber Arrivals at New York as Reported by Importers

Parás and Caucho

	Fine Cases	Medium Cases	Coarse Cases	Caucho Cases	Cametá Cases
SEPTEMBER 14. By "Thespis," Brazil.					
H. A. Astlett & Co.	135	....	196	60	....
Paul Bertuch & Co., Inc.	74	....	49	129	....
SEPTEMBER 19. By "St. Oswald," Brazil.					
H. A. Astlett & Co.	62	....	54	15	....
Paul Bertuch & Co., Inc.	....	....	97	128	....
General Rubber Co.	106	....	....	69	58
Meyer & Brown, Inc.	124	....	....	33	....
SEPTEMBER 24. By "Cleveland," Hamburg.					
L. Littlejohn & Co., Inc.	....	....	....	295	....
OCTOBER 2. By "Justin," Brazil.					
H. A. Astlett & Co.	6	....	44	96	....
Paul Bertuch & Co., Inc.	121	1	47	100	....
General Rubber Co.	1,037	130	132	48	....
L. Littlejohn & Co., Inc.	233	....	94	139	....
Meyer & Brown, Inc.	‡543	....	‡26	‡140	....
H. Muehlstein & Co., Inc.	32	....	....	....	....
Poel & Kelly, Inc.	145	....	70	45	....
OCTOBER 13. By "Francis," Brazil.					
H. A. Astlett & Co.	190	....	25	76	....
Paul Bertuch & Co., Inc.	62	....	36	775	....
General Rubber Co.	218	....	51	....	....
L. Littlejohn & Co., Inc.	116	....	153	397	....
Poel & Kelly, Inc.	....	....	27	....	....

Plantations

	Cases
SEPTEMBER 13. By "Belgenland," Antwerp.	
Bowring & Co.	88
SEPTEMBER 13. By "Colorado," Far East.	
Haldane Bierrie & Co., Inc.	1,850
Charles T. Wilson Co., Inc.	2,895
SEPTEMBER 13. By "Laconia," London.	
Charles T. Wilson Co., Inc.	9
SEPTEMBER 15. By "Havre Maru," Far East.	
Poel & Kelly, Inc.	†68
SEPTEMBER 16. By "Laomedon," Far East.	
H. A. Astlett & Co.	1,858
Baird Rubber & Trading Co., Inc.	330
General Rubber Co.	8,669
Haldane Bierrie & Co., Inc.	350
L. Littlejohn & Co., Inc.	3,906
Meyer & Brown, Inc. pkgs.	3,153
Meyer & Brown, Inc. pkgs.	*50
H. Muehlstein & Co., Inc.	490
Poel & Kelly, Inc.	1,146
Raw Products Co.	831
Rogers Brown & Crocker Bros., Inc.	1,150
Charles T. Wilson Co., Inc.	120
SEPTEMBER 16. By "Seydlitz," Hamburg.	
Meyer & Brown, Inc. pkgs.	264
SEPTEMBER 17. By "City of Salisbury," Far East.	
H. A. Astlett & Co.	2,456
General Rubber Co.	11,878
Haldane Bierrie & Co., Inc.	350
Adolph Hirsch & Co., Inc.	60
Hood Rubber Co.	*305
L. Littlejohn & Co., Inc.	4,331
Meyer & Brown, Inc. pkgs	1,653
H. Muehlstein & Co., Inc.	760
Poel & Kelly, Inc.	1,662
Raw Products Co.	381
Rogers Brown & Crocker Bros., Inc.	354
Charles T. Wilson Co., Inc.	1,326
SEPTEMBER 17. By "Fairfield City," Far East.	
H. A. Astlett & Co.	1,086
Baird Rubber & Trading Co., Inc.	240
General Rubber Co.	3,867
Haldane Bierrie & Co., Inc.	277
Hood Rubber Co.	*331
L. Littlejohn & Co., Inc.	2,402
Meyer & Brown, Inc. pkg.	611
H. Muehlstein & Co., Inc.	475
Poel & Kelly, Inc.	548
Raw Products Co.	50
Charles T. Wilson Co., Inc.	230
SEPTEMBER 17. By "Mangalore," Far East.	
H. A. Astlett & Co.	198
Baird Rubber & Trading Co.	162
Haldane Bierrie & Co., Inc.	450
Hood Rubber Co.	*373
L. Littlejohn & Co., Inc.	250
Meyer & Brown, Inc. pkgs.	866
H. Muehlstein & Co., Inc.	560
Poel & Kelly, Inc.	57
Raw Products Co.	330
SEPTEMBER 17. By "Oklahoma," Far East.	
Rogers Brown & Crocker Bros., Inc.	126
SEPTEMBER 17. By "Resolute," Hamburg.	
L. Littlejohn & Co., Inc.	123
SEPTEMBER 20. By "American Trader," London.	
H. Muehlstein & Co., Inc.	108
SEPTEMBER 20. By "Celtic," Liverpool.	
L. Littlejohn & Co., Inc.	26
Meyer & Brown, Inc. pkgs.	68
SEPTEMBER 20. By "Franconia," Liverpool.	
L. Littlejohn & Co., Inc.	100
Poel & Kelly, Inc.	149
Charles T. Wilson Co., Inc.	117
SEPTEMBER 20. By "Lancastria," London.	
General Rubber Co.	527
Poel & Kelly, Inc.	427
SEPTEMBER 20. By "Zeeland," Antwerp.	
Bowring & Co.	133
SEPTEMBER 20. By "Minnetonka," London.	
L. Littlejohn & Co., Inc.	340
Meyer & Brown, Inc. pkgs.	674
Poel & Kelly, Inc.	21
Charles T. Wilson Co., Inc.	1,203
SEPTEMBER 22. By "Deutschland," Hamburg.	
H. Muehlstein & Co., Inc.	295
Charles T. Wilson Co., Inc.	83
SEPTEMBER 22. By "Roussillon," Bordeaux.	
H. Muehlstein & Co., Inc.	404
SEPTEMBER 23. By "Fuji Maru," Far East.	
H. A. Astlett & Co.	395
Baird Rubber & Trading Co., Inc.	1,806
Baird Rubber & Trading Co., Inc.	200
General Rubber Co.	1,853
L. Littlejohn & Co., Inc.	3,345
Meyer & Brown, Inc. pkgs.	576
H. Muehlstein & Co., Inc.	120
Poel & Kelly, Inc.	346
Poel & Kelly, Inc.	*50
SEPTEMBER 23. By "Korea Maru," Far East.	
Poel & Kelly, Inc.	428
SEPTEMBER 23. By "Pres. Harrison," Far East.	
General Rubber Co.	1
SEPTEMBER 23. By "Pres. Van Buren," Far East.	
H. A. Astlett & Co.	853
Baird Rubber & Trading Co., Inc.	800
General Rubber Co.	2,094
Haldane Bierrie & Co., Inc.	850
Hood Rubber Co.	*126
L. Littlejohn & Co., Inc.	4,130
Meyer & Brown, Inc. pkgs.	3,402
H. Muehlstein & Co., Inc.	920
Poel & Kelly, Inc.	274
Raw Products Co.	1,320
Rogers Brown & Crocker Bros., Inc.	1,596
Charles T. Wilson Co., Inc.	837
SEPTEMBER 24. By "Nevisian," Europe.	
L. Littlejohn & Co., Inc.	21
SEPTEMBER 25. By "Volendam," Rotterdam.	
General Rubber Co.	874
L. Littlejohn & Co., Inc.	134
SEPTEMBER 26. By "Carmania," London.	
H. A. Astlett & Co.	172
Baird Rubber & Trading Co., Inc.	107
General Rubber Co.	1,157
L. Littlejohn & Co., Inc.	84
SEPTEMBER 27. By "Adriatic," Liverpool.	
Baird Rubber & Trading Co., Inc.	124
SEPTEMBER 27. By "American Merchant," London.	
Baird Rubber & Trading Co., Inc.	950
L. Littlejohn & Co., Inc.	354
Charles T. Wilson Co., Inc.	677
SEPTEMBER 27. By "Jacatra," Far East.	
H. A. Astlett & Co.	240
Baird Rubber & Trading Co., Inc.	50
Paul Bertuch & Co., Inc.	85
General Rubber Co.	3,409
Haldane Bierrie & Co., Inc.	67
Hood Rubber Co.	*222
L. Littlejohn & Co., Inc.	1,637
Meyer & Brown, Inc. pkgs.	655
Poel & Kelly, Inc.	872
Raw Products Co.	143
Charles T. Wilson Co., Inc.	275
SEPTEMBER 27. By "Lapland," Antwerp.	
H. A. Astlett & Co.	551
Bowring & Co.	136
SEPTEMBER 27. By "Patrick Henry," Far East.	
H. A. Astlett & Co.	400
L. Littlejohn & Co., Inc.	720
Meyer & Brown, Inc. pkgs.	210
H. Muehlstein & Co., Inc.	240
Rogers Brown & Crocker Bros., Inc.	200
SEPTEMBER 27. By "Raby Castle," Far East.	
H. A. Astlett & Co.	1,885
Baird Rubber & Trading Co., Inc.	740
General Rubber Co.	8,595
Haldane Bierrie & Co., Inc.	500
Adolph Hirsch & Co., Inc.	150
Hood Rubber Co.	*48
L. Littlejohn & Co., Inc.	4,660
Meyer & Brown, Inc. pkgs.	3,286
H. Muehlstein & Co., Inc.	982
Poel & Kelly, Inc.	387
Poel & Kelly, Inc.	*100
Raw Products Co.	220
Rogers Brown & Crocker Bros., Inc.	1,308
Charles T. Wilson Co., Inc.	1,057
SEPTEMBER 27. By "Samaria," Liverpool.	
Baird Rubber & Trading Co., Inc.	39
L. Littlejohn & Co., Inc.	243
Charles T. Wilson Co., Inc.	97
SEPTEMBER 29. By "City of Bedford," Far East.	
H. A. Astlett & Co.	1,614
Baird Rubber & Trading Co., Inc.	620
General Rubber Co.	3,967
Haldane Bierrie & Co., Inc.	350
Hood Rubber Co.	*126
L. Littlejohn & Co., Inc.	4,228
Meyer & Brown, Inc. pkgs.	3,075
Meyer & Brown, Inc. pkgs.	*43
H. Muehlstein & Co., Inc.	350
Poel & Kelly, Inc.	681
Raw Products Co.	1,356
Rogers Brown & Crocker Bros., Inc.	336
Charles T. Wilson Co., Inc.	1,816
SEPTEMBER 30. By "Naperian," Far East.	
H. Muehlstein & Co., Inc.	149
SEPTEMBER 30. By "Suevler," Far East.	
H. Muehlstein & Co., Inc.	82
OCTOBER 2. By "American Banker," London.	
General Rubber Co.	50
Meyer & Brown, Inc. pkgs.	34
Poel & Kelly, Inc.	25
OCTOBER 2. By "Nieuw Amsterdam," Rotterdam.	
General Rubber Co.	77
OCTOBER 2. By "Pennland," Antwerp.	
H. A. Astlett & Co.	287
Bowring & Co.	204
OCTOBER 2. By "Silverpine," Far East.	
H. A. Astlett & Co.	524
General Rubber Co.	3,190
Meyer & Brown, Inc. pkgs.	413
H. Muehlstein & Co., Inc.	480
Poel & Kelly, Inc.	526
Charles T. Wilson Co., Inc.	721
OCTOBER 2. By "West Chopaka," Far East.	
General Rubber Co.	†650
OCTOBER 3. By "Carinthia," Liverpool.	
General Rubber Co.	154
Raw Products Co.	65
Charles T. Wilson Co., Inc.	30
OCTOBER 4. By "Mabout," Far East.	
H. A. Astlett & Co.	150
Baird Rubber & Trading Co., Inc.	342
General Rubber Co.	12
Haldane Bierrie & Co., Inc.	250
Hood Rubber Co.	*63
Meyer & Brown, Inc. pkgs.	68
H. Muehlstein & Co., Inc.	720
Poel & Kelly, Inc.	57
Rogers Brown & Crocker Bros., Inc.	56
Charles T. Wilson Co., Inc.	163
OCTOBER 4. By "Minnewaska," London.	
Baird Rubber & Trading Co., Inc.	741
Raw Products Co.	306
Charles T. Wilson Co., Inc.	418
OCTOBER 4. By "Tymeric," Far East.	
H. A. Astlett & Co.	108
General Rubber Co.	315
L. Littlejohn & Co., Inc.	1,174
Poel & Kelly, Inc.	88
Charles T. Wilson Co., Inc.	224
OCTOBER 6. By "City of Athens," Far East.	
H. A. Astlett & Co.	106
Baird Rubber & Trading Co., Inc.	200
Haldane Bierrie & Co., Inc.	350
Hood Rubber Co.	*62
L. Littlejohn & Co., Inc.	1,876
Meyer & Brown, Inc. pkgs.	665
H. Muehlstein & Co., Inc.	932
Poel & Kelly, Inc.	314
Charles T. Wilson Co., Inc.	56
OCTOBER 6. By "President Pierce," Far East.	
General Rubber Co.	†300

*Arrived at Boston.
†Arrived at Los Angeles.
‡Pelles.

	Cases
OCTOBER 8. By "Dolius," Far East.	
H. A. Astlett & Co.	1,571
Baird Rubber & Trading Co., Inc.	930
Baird Rubber & Trading Co., Inc.	*50
General Rubber Co.	4,569
Haldane Bierrie & Co., Inc.	200
L. Littlejohn & Co., Inc.	3,945
Meyer & Brown, Inc. pkgs.	2,000
H. Muehlstein & Co., Inc.	487
Poel & Kelly, Inc.	860
Raw Products Co.	581
Rogers Brown & Crocker Bros., Inc.	*50
Rogers Brown & Crocker Bros., Inc.	250
OCTOBER 7. By "Pres. Hayes," Far East.	
H. A. Astlett & Co.	1,022
Baird Rubber & Trading Co., Inc.	836
General Rubber Co.	3,194
Haldane Bierrie & Co., Inc.	450
L. Littlejohn & Co., Inc.	3,253
Meyer & Brown, Inc. pkgs.	1,704
H. Muehlstein & Co., Inc.	150
Poel & Kelly, Inc.	80
Rogers Brown & Crocker Bros., Inc.	610
Charles T. Wilson Co., Inc.	542
OCTOBER 9. By "Caronia," Liverpool.	
Baird Rubber & Trading Co., Inc.	72
Poel & Kelly, Inc.	358
OCTOBER 9. By "Krakatau," Far East.	
H. A. Astlett & Co.	479
Baird Rubber & Trading Co., Inc.	258
General Rubber Co.	4,989
L. Littlejohn & Co., Inc.	1,380
Meyer & Brown, Inc. pkgs.	766
Meyer & Brown, Inc. pkgs.	*42
H. Muehlstein & Co., Inc.	394
Poel & Kelly, Inc.	769
Raw Products Co.	218
Rogers Brown & Crocker Bros., Inc.	261
Charles T. Wilson Co., Inc.	67
OCTOBER 10. By "Japanese Prince," Far East.	
H. A. Astlett & Co.	1,933
Baird Rubber & Trading Co., Inc.	1,428
General Rubber Co.	3,642
Haldane Bierrie & Co., Inc.	350
L. Littlejohn & Co., Inc.	4,664
Meyer & Brown, Inc. pkgs.	4,549
H. Muehlstein & Co., Inc.	150
Poel & Kelly, Inc.	1,153
Raw Products Co.	1,217
Rogers Brown & Crocker Bros., Inc.	1,548
Charles T. Wilson Co., Inc.	4,998

* Arrived at Boston.
† Arrived at Los Angeles.
‡ Pelles.

	Cases
OCTOBER 10. By "Tuscaloosa City," Far East.	
H. A. Astlett & Co.	842
General Rubber Co.	1,054
L. Littlejohn & Co., Inc.	108
H. Muehlstein & Co., Inc.	160
OCTOBER 11. By "Baltic," Far East.	
Baird Rubber & Trading Co., Inc.	185
Poel & Kelly, Inc.	40
OCTOBER 11. By "Minnekahda," London.	
Baird Rubber & Trading Co., Inc.	1,120
Charles T. Wilson Co., Inc.	289
OCTOBER 11. By "Steel Scientist," Far East.	
Poel & Kelly, Inc.	†133
OCTOBER 11. By "Stuart Dollar," Far East.	
Poel & Kelly, Inc.	†300
OCTOBER 11. By "Weirbank," Far East.	
H. A. Astlett & Co.	805
Baird Rubber & Trading Co., Inc.	250
General Rubber Co.	1,896
Haldane Bierrie & Co., Inc.	415
Hood Rubber Co.	*63
L. Littlejohn & Co., Inc.	4,446
Meyer & Brown, Inc. pkgs.	2,706
Poel & Kelly, Inc.	541
Raw Products Co.	495
Rogers Brown & Crocker Bros., Inc.	1,340
Charles T. Wilson Co., Inc.	773
OCTOBER 13. By "Karpfanger," Far East.	
H. Muehlstein & Co., Inc.	132
October 14. By "Venice Maru," Far East.	
H. A. Astlett & Co.	745
Baird Rubber & Trading Co., Inc.	235
General Rubber Co.	5,369
L. Littlejohn & Co., Inc.	1,616
Meyer & Brown, Inc. pkgs.	350
Raw Products Co.	68
Charles T. Wilson Co., Inc.	307

Rubber Latex

SEPTEMBER 17. By "Fairfield City," Far East.	
General Rubber Co. gallons	67,173
SEPTEMBER 27. By "Raby Castle," Far East.	Cases
General Rubber Co.	30,433

Manicobas

SEPTEMBER 19. By "St. Oswald," Bahia.	
Adolph Hirsch & Co., Inc. bales	5

Africans

	Cases
SEPTEMBER 13. By "Belgenland," Antwerp.	
Bowring & Co.	27
SEPTEMBER 14. By "Sarcoxie," Bordeaux.	
L. Littlejohn & Co., Inc.	503
SEPTEMBER 15. By "Roussillon," Bordeaux.	
L. Littlejohn & Co., Inc.	550
Poel & Kelly, Inc. bales	865
SEPTEMBER 20. By "Franconia," Liverpool.	
L. Littlejohn & Co., Inc.	18
SEPTEMBER 26. By "Saugus," Marseilles.	
L. Littlejohn & Co., Inc.	111
SEPTEMBER 27. By "Lapland," Antwerp.	
L. Littlejohn & Co., Inc.	618
OCTOBER 3. By "Carinthia," Liverpool.	
L. Littlejohn & Co., Inc.	5
Poel & Kelly, Inc. bales	57
OCTOBER 12. By "Karpfanger," Europe.	
L. Littlejohn & Co., Inc.	715

Balata

	Cases
SEPTEMBER 14. By "Thespis," Brazil.	
Paul Bertuch & Co., Inc.	57
OCTOBER 1. By "Haiti," French Guiana.	
Middleton & Co., Ltd. bales	17
OCTOBER 4. By "Justin," Para.	
H. A. Astlett & Co.	47
OCTOBER 11. By "Mayaro," French Guiana.	
Middleton & Co., Ltd. bales	6

Guayule

	Cases
SEPTEMBER 19. By "Monterey," Mexico.	
Baird Rubber & Trading Co., Inc.	211
Continental Rubber Co., of New York	500
SEPTEMBER 27. By "Panuco," Mexico.	
Continental Rubber Co., of New York	1,584
OCTOBER 6. By "Mexico," Mexico.	
Continental Rubber Co., of New York	560
OCTOBER 10. By "Canto," Mexico.	
Continental Rubber Co., of New York	1,060
OCTOBER 20. By "Monterey," Mexico.	
Continental Rubber Co., of New York	1,060

Imports of Crude Rubber Into the United States by Customs Districts

	*August, 1926		Eight Months Ended *August, 1926	
	Pounds	Value	Pounds	Value
Massachusetts	1,854,368	$701,511	23,643,891	$15,422,801
Buffalo	.....	.....	41,199	21,730
St. Lawrence	.....	.....	3,880	611
New York	58,641,305	23,633,706	562,484,215	352,090,340
Philadelphia	.....	.....	8,856	3,225
Maryland	.....	.....	3,215,454	2,100,961
New Orleans	720	216	5,427	2,051
Los Angeles	256,630	83,097	11,092,669	7,539,064
San Francisco	463,432	186,590	1,584,490	873,571
Oregon	44,800	23,349	291,580	178,614
Washington	.....	.....	1,008,000	662,200
Minnesota	.....	.....	123,200	71,251
Michigan	.....	.....	52,511	23,394
Ohio	90,880	31,279	161,105	75,122
Colorado	22,400	11,004	729,900	664,569
Totals	61,374,535	$24,670,752	604,446,477	$379,729,504

*Including Latex Dry Rubber Content.

Ceylon Rubber Exports from January 1 to July 31, 1926

	Tons
To United Kingdom	9,599.08
Continent	1,794.54
Australia	249.73
America	18,815.31
Egypt	4.11
Africa	32.29
India	3.77
China	2.46
Japan	88.50
Total	30,589.79

Ceylon Annual Exports, 1920-1925

		Tons
For the same period last year		23,325.47
For the year	1925	45,697.19
	1924	37,351.13
	1923	37,111.88
	1922	47,260.00
	1921	40,210.31
	1920	38,971.59

British Malaya

Rubber Exports

An official cablegram from Singapore to the Malay States Information Agency, 88 Cannon street, London, E. C. 4, England, states that the amount of rubber exported from British Malaya in the month of September last totaled 35,913 tons. The amount of rubber imported was 13,972 tons, of which 11,429 tons were declared as wet rubber. The following are comparative statistics:

	1925		1926	
	Gross Exports	Foreign Imports	Gross Exports	Foreign Imports
	Tons	Tons	Tons	Tons
January	19,183	10,132	30,452	10,237
February	21,622	10,071	30,440	8,306
March	26,836	13,399	35,012	14,800
April	22,414	11,750	23,727	10,565
May	26,667	12,979	31,231	10,604
June	27,894	14,706	30,624	11,764
July	24,809	16,192	28,824	15,280
August	27,753	12,025	34,625	13,595
September	29,425	12,913	35,913	13,972
Totals	226,603	114,167	280,848	109,123

Note—The above figures represent the totals compiled from declarations received up to the last day of the month for exports from and imports to all ports of British Malaya and not necessarily the actual quantity shipped or landed during that month.

Distribution

The following is a comparative return of distribution of shipments during the months of August and September, 1926:

	August, 1926	September, 1926
	Tons	Tons
United Kingdom	7,767	7,891
United States	22,124	22,475
Continent of Europe	2,036	2,071
British Possessions	937	962
Japan	1,753	2,500
Other foreign countries	8	14
Totals	34,625	35,913

Dealers' Stocks of Rubber

An official telegram from Singapore to the Malay States Information Agency, 88 Cannon street, London, E. C. 4, England, states that dealers stocks of rubber on September 30, 1926, were in Singapore, 21,563 tons, and in Penang 4,434 tons.

INDIA RUBBER WORLD
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